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OF

MEDICAL SCIENCE.

EDITED BY

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THE DUBLIN JOURNAL

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MEDICAL SCIENCE.

CONTENTS.

THIRD SERIES, No. CCXXIX.—JANUARY 1, 1891.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. I.—Multiple Neuritis, illustrated by Clinical Cases. By J. MAGEE FINNY, M.D. Dubl.; President of the Royal College of Physicians of Ireland; Clinical Physician to Sir Patrick Dun's Hospital; King's Professor of Praetice of Medicine in the Sehool of Physic, Ireland, - - - - - - - - - - 1

ART. II.—How they went up Nile. From Gemai to Korti, 1884. By BRIGADE-SURGEON ALBERT A. GORE, M.D., Army Medical Staff, 16

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. Recent Works on Anatomy:—1. Quain's Elements of Anatomy. Edited by EDWARD ALBERT SCHÄFER, F.R.S., and GEORGE DANCER THANE. Vol. I., Part I. Embryology; and Vol. II., Part I. Osteology. Tenth Edition. 2. Anatomy, Descriptive and Surgical. By HENRY GRAY, F.R.S., &c. Twelfth Edition. Edited by T. PICKERING PICK. 3. Traité Elémentaire d'Anatomie de l'Homme. Par. CH. DEBIERRE, Professeur d'Anatomie à la Faculté de Médecine de Lille. Tome Second. 4. Guide de Dissection et Résumé d'Anatomie Topographique. Adaptation française du manuel d'Anatomie Pratique de D. J. CUNNINGHAM, M.D. Par le DR. P. KUBORN, - - - - - - - - - 36

2. Iufluenza; or Epidemic Catarrhal Fever. By E. SYMES THOMPSON, M.D., F.R.C.P.; Gresham Professor of Medicine, and Consulting Physician to the Hospital for Consumption and Diseases of the Chest, Brompton, - - - - - - - - 43

3. Notes on Typhoid Fever: Tropical Life and its Sequelæ. By JEFFERY E. MARSTON, M.D., C.B., &c.; Surgeon-General, Medical Staff (Retired), - - - - - - - - 47

4. Handbook to Dr. Koch's Treatment in Tubercular Disease. By E. F. GRÜN, M.R.C.S., L.R.C.P., and W. D. SEVERN, Assoc. Roy. Coll. Sci., - - - - - - - - 49

PAGE

5. Medical Diaries and Visiting Lists for 1891:—1. Smith's Physicians' and Surgeons' Visiting List for 1891. 2. The A B C Medical Diary and Visiting List. 3. The Medical Bulletin Visiting List, or Physician's Call Record, - - - - - - 50

6. De la Lobéline dans la Therapeutique de l'Asthma. Mémoire présenté au 1er Congrès Brésilien de Médecine et Chirurgie, et lu devant le même Congres à la Séance du 15 Sept., 1888. Par le Dr. Silva Nunes, - - - - - - 52

7. Hypnotic Suggestion, with Notes of a few Cases treated by the Nancy Method. Read before the British Medical Association at Birmingham on the 31st July, 1890, by George C. Kingsbury, M.A., M.D., Blackpool, - - - - - - 52

8. I. Flat Foot. Clinical Lecture, Post Graduate Course. Edinburgh, October, 1889. II. Paper read before Edinburgh Medico-Chirurgical Society, May, 1890, by A. G. Miller, F.R.C.S. Ed.; Lecturer on Clinical Surgery, and Surgeon to the Royal Infirmary, Edinburgh, 52

9. The Bath Thermal Waters and Treatment. By T. Pagan Lowe, M.R.C.S. Eng.; L.R.C.P. Edin.; Honorary Medical Officer to the Eastern Dispensary, Bath, &c. With Historical Notes by Herbert Bentley Freeman, M.A., English Chaplain at Algiers, and formerly Curate of Christ Church, Bath, - - - - 53

Part III.—SPECIAL REPORTS.

Report on Nervous and Mental Disease. By Ringrose Atkins, M.A., M.D.; Resident Medical Superintendent, District Lunatic Asylum, Waterford:—

1. Clinical Psychiatry, - - - - - - 54
2. Neuro-Anatomy and Physiology, - - - - 60
3. Neuro-Pathology and Pathological Anatomy, - - - 64

Part III.—MEDICAL MISCELLANY.

Royal Academy of Medicine in Ireland:—

SECTION OF MEDICINE.

Multiple Neuritis. By Dr. J. Magee Finny, - - - 71
Acromegaly. By Dr. Joseph Redmond, - - - 72

SECTION OF OBSTETRICS.

Exhibitions. By Dr. Cranny, Dr. Macan, Mr. Tobin, and Dr. William Smyly, - - - - - - 72
Notes on the Operative Treatment of Uterine Cancer. By Dr. S. R. Mason, - - - - - - - 75
Complete or Annular Prolapse of the Urethral Mucous Membrane. By Dr. Bagot, - - - - - - - 78
Myoma Uteri. By Dr. William Smyly, - - - 80
Retained Fœtus. By Dr. Macan, - - - - 80
Double Pyosalpinx. By Dr. William Smyly, - - - 81

PAGE

SECTION OF PATHOLOGY.

The late Anthony H. Corley, M.D., - - - - 82
Congenital Deformity. By Dr. E. H. Bennett, - - - 82
Notes on the Pathology of a Dentigerous Cyst. By Dr. A. W. Baker, - - - - - - - - 85
The Irish Elk. By Dr. Frazer, - - - - - 85
Spontaneous Enterectomy. By Dr. Birminghan, - - 85
Tricuspid Narrowing. By Dr. H. T. Bewley, - - - 85
Scirrhus Cancer of the Male Breast. By Dr. Patteson, - 85

Sanitary and Meteorological Notes. Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F.R.Met.Soc.; Diplomate in State Medicine and ex-Sch. of Trin. Coll. Dubl.:—
Vital Statistics for Four Weeks ending Saturday, November 29, 1890, - - - - - - - - 87
Meteorology—Abstract of Observations made at Dublin for Month of November, 1890, - - - - - - 92

Periscope:—
Induction of Premature Labour, - - - - - 70
Nervous Troubles following Organic Stricture, - - - 70
Nocturnal Incontinence, - - - - - - 70
Fatty Tumour of the Labium, - - - - - 86
Arterial Anomalies, - - - - - - 86
Uterine Hernia through the Cicatrix of a Cæsarean Section, - 95
Fatal Hæmorrhage from Laceration of the Vulva, - - 95
Hernia at the Inner Inguinal Ring, - - - - 96
Whooping-cough, - - - - - - 96
Interlobular Pyopneumothorax, - - - - - 96
Salicylic Acid in Psoriasis, - - - - - 96
Puerperal Eclampsia, - - - - - 96

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THE DUBLIN JOURNAL

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MEDICAL SCIENCE.

CONTENTS.

THIRD SERIES, No. CCXXX.—FEBRUARY 2, 1891.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. III.—Scleroderma; Hemiatrophy of Face and Limbs. By C. J. NIXON, M.D.; Senior Physician, Mater Misericordiæ Hospital: Professor of Medicine, Catholic University, - - - 97

ART. IV.—On Extraction of Parietal Intra-Uterine Fibro-Myomata through the Natural Passages by Means of Professor Vulliet's Method of Dilatation by Tampons. By DR. EMILE JUILLIARD. Translated by CHARLES G. CUMSTON, First Assistant at Docent Kummer's Clinic, Geneva—(*continued*) - - - - 105

ART. V.—Some Practical Considerations on the Anatomy of the Mastoid Region, with Guides for Operating. By AMBROSE BIRMINGHAM, M.B.; Professor of Anatomy, Catholic University, Ireland—(Illustrated), - - - - - - - - - 116

ART. VI.—How they went up Nile. From Gemai to Korti, 1884. By BRIGADE-SURGEON ALBERT A. GORE, M.D., Army Medical Staff—(*continued*), - - - - - - - 121

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. Army Medical Department. Report for the Year 1888; with Appendix. Vol. XXX., - - - - - - 133

2. A Dictionary of Practical Medicine. By various Writers. Edited by JAMES KINGSTON FOWLER, M.A., M.D.; Fellow of the Royal College of Physicians; Senior Assistant Physician to the Middlesex Hospital, and Lecturer on Pathological Anatomy in the Medical School, &c., - - - - - - - 135

3. Lectures in Physiology, Hygiene, &c., for Hospital and Home Nursing. By CHARLES E. FITZGERALD, M.D., - - - 137

4. Transactions of the Association of American Physicians. Fifth Session. Held at Washington, D.C., May 13, 14, and 15, 1890. Vol. V., - - - - - - - - 139

PAGE

5. Twenty-sixth Report of the Trustees of the City Hospital, Boston; with Reports of the Superintendent and Medical and Surgical Staff, Rules for Admissions and Discharges, Prospectus of Training-School for Nurses, &c., - - - - - - 144
6. Handbook of Diseases of the Eye. By H. R. Swanzy, F.R.C.S.I. Third Edition, - - - - - - - 145
7. Epilepsy: its Pathology and Treatment. Being an Essay to which was awarded a Prize of 4,000 francs at the Académie Royal de Belgique, December, 1889. By Hobart Amory Hare, M.D., Univ. Penna., B.Sc.; Clinical Professor of the Diseases of Children in the University of Pennsylvania, &c., - - - - 146
8. Cycling and Health. By Oscar Jennings, M.D. Translated from the French of the Third Edition by J. Crosse Johnston, Brigade Surgeon, A.M.S., - - - - - - - 147
9. Pulmonary Consumption among Firemen. By Thomas J. Mays, M.D., Professor of Diseases of the Chest in the Philadelphia Policlinic, - - - - - - - 148
10. The Constitutional Requirements for Tropical Climates, and Observations on the Sequel of Diseases contracted in India. By Sir William Moore, K.C.I.E.; Honorary Physician to the Queen; late Surgeon-General with the Government of Bombay, - - 148
11. A Zoological Pocket-book, or Synopsis of Animal Classification, comprising Definitions of the Phyta, Classes and Orders, with Explanatory Remarks and Tables. By Dr. Emil Selenka, Translated from the Third German Edition by J. R. Ainsworth Davis, B.A., - - - - - - - 149

Part III.—SPECIAL REPORTS.

Report on Nervous and Mental Disease. By Ringrose Atkins, M.A., M.D.; Resident Medical Superintendent, District Lunatic Asylum, Waterford.—(*continued*):—

4. Neuro-Therapeutics, - - - - - - 150

Part IV.—MEDICAL MISCELLANY.

Royal Academy of Medicine in Ireland:—

SECTION OF SURGERY.

The late Mr. Anthony H. Corley, Past President, - - 156
Treatment of Lupus by Koch's Method. By Mr. Thornley Stoker, - - - - - - - 157
Operative Treatment of Sympathetic Ophthalmia. By Mr. Story, 158
Transfusion and Intra-Venous Injection of Milk and Saline Fluid. By Dr. Meldon, - - - - - - 158

SECTION OF MEDICINE.

Case of Left Hemiplegia with Aphasia. By Dr. Beatty, - 160
A Case of Scleroderma. By Dr. Nixon, - - - - 161
Cystinuria. By Dr. Walter G. Smith, - - - - 161

PAGE

SECTION OF OBSTETRICS.

Exhibitions. By Mr. M'Ardle, Dr. W. J. Smyly, and Dr. Macan, - - - - - - - 162
Abdominal Section. By Dr. Macan, - - - - 163
Fæcal Fistula. By Dr. W. J. Smyly, - - - - 164

SECTION OF ANATOMY AND PHYSIOLOGY.

Exhibitions. By Profs. Cunningham and Birmingham, - 165
Series of Human Fibulæ. By Prof. Bennett, - - - 165
Anatomy of the Mastoid Region, with Guides for Operating. By Prof. Birmingham, - - - - - - - 166
The Sylvian Region of the Brain. By Prof. Cunningham, - 167

SECTION OF PATHOLOGY.

Fibro-Glandular Hyperplasia of Prostate. By Dr. Patteson, - 167
Encephaloid Carcinoma of Skin of Thigh with Lymphatic Infiltration. By Dr. M'Weeney, - - - - - 168
Remarkable Enterolith. By Mr. Myles, - - - 169
Marjolin's Ulcer. By Dr. J. K. Barton, - - - 170

Sanitary and Meteorological Notes. Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F.R.Met.Soc.; Diplomate in State Medicine and ex-Sch. of Trin. Coll. Dubl.:—
Vital Statistics for Five Weeks ending Saturday, January 3, 1891, 171
Meteorology—Abstract of Observations made at Dublin for Month of December, 1890, - - - - - - 177
Rainfall in 1890 in Dublin, - - - - - 181
Abstract of Meteorological Observations taken at Dublin during the Year 1890, - - - - - - - 183

Periscope:—
Urticaria of the Tongue, - - - - - - 132
Congrès Français de Chirurgie, 1891, - - - - 155
Laparotomy in Italy, - - - - - - 155
Respiratory Failure under Chloroform, - - - - 170
Influence of Menstruation on the Course of Phthisis, - - 170
Keanu, - - - - - - - - 184
South American Journalism, - - - - - 184
Cocaïn and Antipyrin combined for Local Anæsthesia, - - 184

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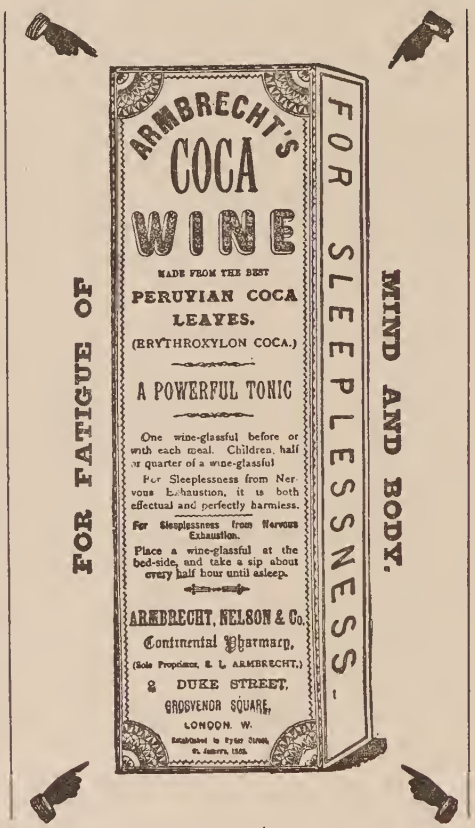
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CONTENTS.

THIRD SERIES, No. CCXXXI.—MARCH 2, 1891.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. VII.—Professor Koch's Treatment of Pulmonary Tuberculosis. By C. J. NIXON, M.D. (Hon. Causâ), R.U.I.; M.B., LL.D., Univ. Dubl.; Senior Physician, Mater Misericordiæ Hospital; Professor of Medicine, Catholic University, - - - - - 185

ART. VIII.—Notes on a Series of Phthisical Cases in Various Stages under Treatment by Koch's Method. By M. A. BOYD, M.D.; Physician, Mater Misericordiæ Hospital, - - - - 193

ART. IX.—A Series of Six Cases of Pulmonary Disease treated by Koch's Method. By JOHN WILLIAM MOORE, B.A., M.D., M.Ch., Univ. Dubl.; Fellow and Registrar of the Royal College of Physicians of Ireland; Physician to the Meath Hospital, Dublin; Joint Professor of Practice of Medicine in the Schools of Surgery of the Royal College of Surgeons in Ireland; Consulting Physician to Cork-street Fever Hospital, Dublin, and to the Whitworth Hospital, Drumcondra; ex-Scholar and Diplomate in State Medicine of Trinity College, Dublin, - - - - - - 205

ART. X.—The Civil Service Insurance Scheme. By E. MACDOWEL COSGRAVE, M.D., F.R.C.P.I.; Physician to Cork-street Fever Hospital, and to the Whitworth Hospital, Drumcondra; Professor of Biology, Royal College of Surgeons; Hon. Sec., Section of State Medicine, Royal Academy of Medicine, - - - - 212

ART. XI.—The Provincial Hospitals of Ireland. By Z. JOHNSON, A.M., Univ. Dubl.; L.R.C.P.I., F.R.C.S.I., &c.; Senior Medical Officer to the Kilkenny County Infirmary; ex-President of the Irish South Eastern Medical Association, - - - - - 217

Part II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

PAGE

1. Report upon the State of Public Health and the Sanitary Work performed in Dublin during the Year 1889; also Twenty-Eighth Annual Report upon the Analysis and Inspection of Food, &c. By Sir Charles A. Cameron, M.D.; D.P.H., Cambridge; M.C.P.; Past President and Professor of Hygiene and Chemistry, Royal College of Surgeons; President of the British Public Health Society, 227
2. Beitrage zur Augenheilkunde. Von Prof. R. Deutschmann, in Hamburg. I. Heft. Mit 10 Abbildungen im Text, - - 229
3. Heredity: Health and Personal Beauty. By John V. Shoemaker, A.M., M.D.; Professor of Materia Medica, Pharmacology, Therapeutics, and Clinical Medicine, and Clinical Professor of Diseases of the Skin in the Medico-Chirurgical College of Philadelphia, &c., 231
4. A Practical Treatise on Nervous Exhaustion (Neurasthenia); its Symptoms, Nature, Sequences, Treatment. By George M. Beard, A.M., M.D.; Professor of Electro-Therapeutics in the New York Post-Graduate School and Hospital, &c., - - - - 233
5. On the Natural Mineral Waters and Spa of Leamington. By R. Eardley Wilmot, M.B., - - - - - - 234
6. Pocket Medical Lexicon. By John M. Keating, M.D. (Univ. of Pa.); F.C.P., Philadelphia, &c.; and Henry Hamilton, - 234
7. Pasteur and Rabies. By Thomas M. Dolan, M.D., F.R.C.S. Ed., - 235

Part III.—SPECIAL REPORTS.

Report on Materia Medica and Therapeutics. By Walter G. Smith, M.D., Univ. Dubl.; Physician to Sir Patrick Dun's Hospital; King's Professor of Materia Medica and Pharmacy, School of Physic, Trinity College, Dublin:—

Salicylic Acid, - - - - - - - 236
Action of Chloroform, - - - - - - 237
Recent Hypnotics and Analgesics, - - - - 239
Urethane, - - - - - - - 240
Aristol, - - - - - - - - 241
Creolin, - - - - - - - - 241
Ichthyol, - - - - - - - - 242
Diuretin, - - - - - - - - 242
Orexin, - - - - - - - - 242
Chloralamide, - - - - - - - 244
Sulphonal, - - - - - - - 245
Trional and Tetronal, - - - - - - 247
Euphorine, - - - - - - - 247
Hypnal, - - - - - - - - 248
Exalgin, - - - - - - - - 249
Antifebrin, - - - - - - - 250
Antipyrin, - - - - - - - 250
Phenacetin, - - - - - - - 251

Part IV.—MEDICAL MISCELLANY.

PAGE

Royal Academy of Medicine in Ireland:—

SECTION OF SURGERY.

The Treatment of Surgical Tuberculosis by Koch's Method. By Mr. F. A. Nixon, Prof. Bennett, Mr. Myles, Mr. Kendal Franks, Sir William Stokes, Dr. H. C. Tweedy, Mr. Tobin, Dr. Meldon, Mr. Thornley Stoker, and Mr. Lentaigne, - 252

SECTION OF MEDICINE.

Phthisis in Various Stages treated by Koch's Method. By Dr. M. A. Boyd, - - - - - - - 261

A Series of Six Cases of Pulmonary Disease treated by Koch's Method. By Dr. J. W. Moore, - - - - 261

Koch's Treatment of Pulmonary Tuberculosis. By Dr. C. J. Nixon, 262

SECTION OF STATE MEDICINE.

The Education of Midwives considered in Connection with the Midwives Registration Bill. By Dr. Atthill, - - 265

Note on Illness caused apparently by Aniline Coloured Sweetmeats. By Sir Charles Cameron, - - - - - 266

Civil Service Insurance Scheme. By Dr. MacDowel Cosgrave, 267

Sanitary and Meteorological Notes. Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F.R.Met.Soc.; Diplomate in State Medicine and ex-Sch. of Trin. Coll. Dubl.:—

Vital Statistics for Four Weeks ending Saturday, January 31, 1891, - - - - - - - - 268

Meteorology—Abstract of Observations made at Dublin for Month of January, 1891, - - - - - - 273

Periscope:—

Medical Titles, - - - - - - - 226

Cancer of the Bladder, - - - - - - 251

Wine for Pulmonary Tuberculosis, - - - - 251

The Relation of Diseases of Animals to those of Man, - - 277

Virchow Testimonial Fund, - - - - - 278

British Medical Service, - - - - - - 279

The Army Medical Department, - - - - - 280

Admission of Women Students to the Edinburgh Royal Infirmary, 280

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THE DUBLIN JOURNAL

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MEDICAL SCIENCE.

CONTENTS.

THIRD SERIES, No. CCXXXII.—APRIL 1, 1891.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. XII.—Hydatid Cyst of the Pleura. By GEORGE F. DUFFEY, M.D.; Vice-President, Royal College of Physicians of Ireland; Physician, City of Dublin Hospital; Professor of Materia Medica and of Pharmacy, Royal College of Surgeons in Ireland, &c., - 281

ART. XIII.—Professor Koch's Treatment of Tuberculosis. By KENDAL FRANKS, M.D., Univ. Dubl.; Fellow and Member of Council, Royal College of Surgeons; Surgeon to the Adelaide Hospital; Surgeon-in-Ordinary to his Excellency the Lord Lieutenant, - 287

ART. XIV.—On Extraction of Parietal Intra-Uterine Fibro-Myomata through the Natural Passages by Means of Professor Vulliet's Method of Dilatation by Tampons. By DR. EMILE JUILLIARD. Translated by CHARLES G. CUMSTON, First Assistant at Docent Kummer's Clinic, Geneva—(*continued*) - - - - 306

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. Recent Works on Public Health:—1. A Manual of Public Health. By A. WYNTER BLYTH, M.R.C.S., L.S.A., F.C.S., F.I.C., Barrister-at-Law. 2. Text-Book of Hygiene. A Comprehensive Treatise of the Principles and Practice of Preventive Medicine from an American Standpoint. By GEORGE H. ROHÉ, M.D. Second Edition. Thoroughly revised and largely re-written, with many Illustrations and valuable Tables. 3. Hygiene and Public Health. By B. ARTHUR WHITELEGGE, M.D. 4. Aids to Sanitary Science. for the Use of Candidates for Public Health Qualifications. By FRANCIS J. ALLEN, M.D., - - - - - 316

2. Description of the Johns Hopkins Hospital. By JOHN S. BILLINGS, M.D., - - - - - - - - 326

3. The Lord of Humanity; or, the Testimony of Human Consciousness. By F. J. GANT, F.R.C.S.; Senior Surgeon to the Royal Free Hospital, 330

4. Studies of Old Case-Books. By SIR JAMES PAGET, Bart., - - 331

PAGE

5. A Text-Book of General Therapeutics. By W. Hale White, M.D., F.R.C.P., - - - - - - - - - 333
6. Transactions of the Medical and Chirurgical Faculty of the State of Maryland, at its Semi-Annual Session, held at Hagerstown, Maryland, November, 1889. Ninety-second Annual Session, held at Baltimore, Maryland, April, 1890, - - - - - 334
7. Medical Communications of the Massachusetts Medical Society. Vol. XV., No. 1, 1890, - - - - - - - 335
8. Notes on Pathology.—General Pathology. By J. R. Whitaker, Senior Demonstrator of Anatomy, School of Medicine, Minto House, Edinburgh, - - - - - - - - 337
9. On the Causes, Treatment, and Cure of Stammering. By A. G. Bernard, M.R.C.S., L.R.C.P., - - - - - 338
10. Flushing and Morbid Blushing: their Pathology and Treatment. By Harry Campbell, M.D., B.S. (Lond.), - - - 338
11. Foods and Dietaries: a Manual of Clinical Dietetics. By R. W. Burnet, M.D., M.R.C.P., &c., - - - - - 339
12. Observations on the Secretion of Bile in a Case of Biliary Fistula. By A. W. Mayo Robson, F.R.C.S., - - - - 340
13. A Handbook of the Theory and Practice of Medicine. By Frederick T. Roberts, M.D., B.Sc., F.R.C.P.; Professor of Materia Medica and Therapeutics, and of Clinical Medicine, at University College, &c. Eighth Edition, - - - - - 341
14. Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Vol. XI. Phædronus—Régent, - - 342
15. The Elements of Ophthalmoscopic Diagnosis. By George A. Berry, M.D, F.R.C.S. Ed., - - - - - 342
16. Differentiation in Rheumatic Diseases (so-called). By Hugh Lane, L.R.C.P., &c., - - - - - - - 343
17. The Transactions of the Pathological Society of London, comprising the Report of the Proceedings for the Session 1889-90, - - 344

Part III.—MEDICAL MISCELLANY.

Royal Academy of Medicine in Ireland:—

SECTION OF OBSTETRICS.

The late Dr. J. A. Byrne, - - - - - 345
Par-Ovarian Dermoid Cyst. By Dr. T. More Madden, - 345
Exhibitions. By Drs. W. J. Smyly and Bagot, - - 346
Massage as applied to the Treatment of Incontinence of Urine in Females. By Dr. Bagot, - - - - - 346

SECTION OF PATHOLOGY.

Specimen of Cystic Kidney. By Mr. Kendal Franks, - - 351
Exhibition of Cerebral Tumour. By Dr. E. H. Bennett, - 352
Nasal Concretion and Rhinolith. By Dr. N. Falkiner, - - 354
Hydatid Cyst of the Pleura. By Dr. Duffey, - - - 354

PAGE

SECTION OF SURGERY.

Specimens. Exhibited by Messrs. Kendal Franks, Conway Dwyer, Thornley Stoker, F. A. Nixon, Lentaigne, and Tobin, - - - - - - - - - 354

Professor Koch's Treatment of Tuberculosis. By Mr. Kendal Franks, - - - - - - - - 354

Cork Medical and Surgical Association:—

Cystic Enchondroma of Parotid Region. By Dr. Moriarty, - 357

Blood Cast of Uterus. By Dr. Moriarty, - - - 357

Submucous Fibroid of Uterus. By Dr. Hobart, - - 357

Enlarged Bursa Patellæ. By Dr. Cotter, - - - 357

The Out-Patients' Department of General Hospitals as a Field for Clinical Teaching. Being an Address delivered before the Annual Meeting of the Dublin Branch of the British Medical Association, January, 1891. By Walter G. Smith, M.D., President of the Branch, - - - - - - 358

Sanitary and Meteorological Notes. Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F.R.Met.Soc.; Diplomate in State Medicine and ex-Sch. of Trin. Coll. Dubl.:—

Vital Statistics for Four Weeks ending Saturday, February 28, 1891, - - - - - - - - - 363

Meteorology—Abstract of Observations made at Dublin for Month of February, 1891, - - - - - - - 368

Periscope:—

Cocaïn and Antipyrin in Obstinate Vomiting, - - - 356

Eye-strain and Headache, - - - - - 356

Massage, - - - - - - - - - 357

Œsophageal Stricture, - - - - - - 357

Respect for Science in Russia, - - - - - 362

Royal College of Physicians of Edinhurgh: Parkin Bequest, - 372

Gheel, - - - - - - - - - 372

Massachusetts General Hospital, Boston, - - - - 373

Epistaxis, - - - - - - - - 373

Ovarian Cysts, - - - - - - - - 374

Successful Splenectomy, - - - - - - 374

Excision of the Elbow, - - - - - - 374

Hysterical Aphonia, - - - - - - 374

Cerebral Localisation, - - - - - - 374

New Preparations and Scientific Inventions:—

Novel Granular Effervescent Preparations, - - - 375

Caffyn's Liquor Carnis, - - - - - - 375

Tabloids of Compressed Pure Willow Charcoal, - - - 375

Medicine Cachets, - - - - - - - 376

Quinine Tabloids, - - - - - - - 376

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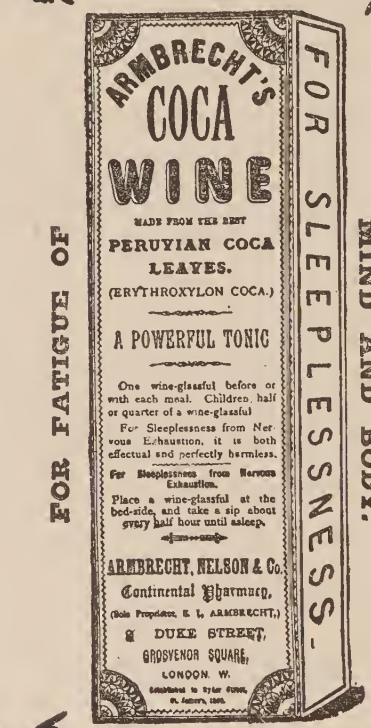
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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

CONTENTS.

THIRD SERIES, No. CCXXXIII.—MAY 1, 1891.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. XV.—Hypnotism. By FRANCIS R. CRUISE, M.D., Univ. Dubl.; ex-President of the Royal College of Physicians of Ireland; Consulting Physician to the Mater Misericordiæ Hospital, Dublin, - 377

ART. XVI.—Should we give Hypnotism a Trial? By GEORGE C. KINGSBURY, M.A., M.D., B.Ch., Univ. Dubl.: Blackpool, - 396

ART. XVII.—On the Diagnostic Value of Venous Humming Murmurs in the Neck: a Study in Statistics. By HENRY T. BEWLEY, M.D., Dub., F.R.C.P.I.; Assistant Physician to the Adelaide Hospital; and Lecturer on Medical Jurisprudence in Trinity College, Dublin, 406

ART. XVIII.—Puerperal Fever: its Nature, Prevention, and Treatment. By JOHN W. BYERS, M.A., M.D.; Physician for Diseases of Women to the Royal Hospital, Belfast; Physician to the Belfast Hospital for Sick Children; Examiner in Midwifery, and in Diseases of Women and Children, to the Royal University of Ireland; Fellow of the Obstetrical Society of London, and Fellow of the British Gynæcological Society, - - - - - 410

ART. XIX.—Arsenic in the Early Stages of Enteric Fever. By FREDERICK KIRKPATRICK, M.B., Univ. Dubl.; ex-President of the Royal College of Surgeons in Ireland, - - - 420

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. Transactions of the Royal Academy of Medicine in Ireland. Vol. VIII. Edited by WILLIAM THOMSON, M.A., F.R.C.S., General Secretary; Surgeon to the Richmond Hospital. - - - 423

2. Diabetes: its Causes, Symptoms, and Treatment. By CHARLES W. PURDY, M.D., - - - - - - 425

PAGE

3. Researches in Micro-Organisms, including an Account of Recent Experiments in the Destruction of Microbes in certain Infectious Diseases—Phthisis, &c. By A. B. Griffiths, Ph.D., F.R.S.E., F.C.S., &c., - - - - - - - - 426

4. Twelve Lectures on the Structure of the Central Nervous System, for Physicians and Students. By Dr. Ludwig Edinger. Second Revised Edition. Translated by Willis Hall Vittum, M.D. Edited by E. Eugene Riggs, A.M., M.D., - - - 429

5. Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by J. Batty-Tuke, M.D., and D. Noël Paton, M.D. Vol. III., - - - - - - 430

6. Evidences of the Communicability of Consumption. By G. A. Heron, M.D., - - - - - - - 438

7. The Intracranial Circulation, and its Relation to the Physiology of the Brain. By James Cappie, M.D., - - - - 441

8. Igiene dell' Orecchio. Per il Prof. Vincenzo Cozzolino, Direttore della clinica pareggiata dell' orecchio, naso, e gola nell' Ospedale Clinico dell' Università di Napoli; Vice-Presidente del Congresso Internazionale Speciale di Parigi, 1889, &c., - - - 442

9. The Convolutions of the Brain: a Study in Comparative Anatomy. By Sir William Turner, Knt., - - - - - 443

10. The Fourth Annual Medical Report of the Hao-Meng-Fông Hospital. By C. C. DeBurgh Daly, M.B., - - - - 444

11. A Text-book of Chemical Physiology and Pathology. By W. D. Halliburton, M.D., B.Sc., - - - - - 445

12. Transactions of the American Dermatological Association. Fourteenth Annual Meeting on the 2nd, 3rd, and 4th September, 1890. 446

13. The Year Book of Treatment for 1891. A Critical Review for Practitioners of Medicine and Surgery, - - - - 447

14. Some Considerations in regard to Acute Obstructive Diseases of the Lungs. By A. H. Smith, M.A., M.D., - - - - 448

15. The Dignity of Woman's Health, and the Nemesis of its Neglect. By Robert Reid Rentoul, Doctor of Medicine; M.R.C.S. Eng.; Fellow of the Obstetrical Society of London, - - - 448

16. Lehrbuch der Auscultation und Percussion, mit besonderer Berücksichtigung der Besichtigung, Betastung, und Messung der Brust und des Unterleibs zu diagnostischen Zwecken (Text-book of Auscultation and Percussion). Von Dr. C. Gerhardt, Professor der Medicin und Geh. Med. Rath, in Berlin, - - - 449

17. The Proclivity of Women to Cancerous Diseases and to certain Benign Tumours; with Appendix on Heredity as a Cause of Cancer. By Herbert Snow, M.D. (Lond.), &c., - - - - 450

18. Royal University of Ireland:—1. The Calendar for the Year 1891. 2. Examination Papers, 1890. A Supplement to the University Calendar for the Year 1891, - - - - - 451

Part III.—MEDICAL MISCELLANY.

PAGE

Royal Academy of Medicine in Ireland:—

SECTION OF MEDICINE.

Specimens Shown. By Drs. Walter G. Smith and J. O'Carroll, 452
The Diagnostic Significance of Venous Hum in the Neck: a Study in Statistics. By Dr. Bewley, - - - - 453
A Case of Myelogenous Leucocythæmia. By Dr. Wallace Beatty, - - - - - - - 454
Malignant Endocarditis. By Dr. O'Carroll. - - - 455
Hypnotism. By Dr. Cruise, - - - - - 455
Should we give Hypnotism a Trial? By Dr. G. C. Kingsbury, - 455

Clinical Records:—

Recurrent Pneumonia in a Child: Marked Benefit from Venesection. By J. W. Moore, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; Physician to the Meath Hospital and County Dublin Infirmary, - - 460

Sanitary and Meteorological Notes. Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F.R.Met.Soc.; Diplomate in State Medicine and ex-Sch. of Trin. Coll. Dubl.:—

Vital Statistics for Four Weeks ending Saturday, March 28, 1891, 463
Meteorology—Abstract of Observations made at Dublin for Month of March, 1891, - - - - - - 468

Periscope:—

Salipyrin, - - - - - - - 462
International Congress of Hygiene and Demography. Section II.—Bacteriology. Laboratory and Museum, - - - 472

New Preparations and Scientific Inventions:—

Clinical Slate, - - - - - - - 472

A WARNING.

In an article which appeared in the "Archives of Pediatrics," January, 1891, we read as follows :—"'To cure quickly, safely, and pleasantly,' is a maxim which has come down to us from the ancients. In many instances, I fear, the entire proposition is forgotten, even that portion which relates to the pleasant administration of remedies." . . . .

One case of illness in a child is described thus:—"By actual count that child was taking *nine* different drugs, hardly one of which was indicated; it was having bicarbonate of sodium, iodide of potassium, muriate of ammonia, tinctures of aconite, belladonna, camphor and opium, calomel, a little camphor liniment externally, supplemented and strengthened by a plaster of belladonna. Sometimes it is impossible to render medication pleasant without sacrificing the usefulness of the drug ; with care, however, we can do much; we can avoid prescribing large mixtures, can stop tablespoonful doses—happily the custom of ordering four, six, and eight ounce bottles of medicine has nearly ceased."

The writer may have slightly exaggerated the real facts of the case; it is, however, not unusual to see prescriptions containing quite as many ingredients mixed together without any regard as to incompatibles—tannic acid infusions with tincture of digitalis—whereby the whole of the active principles are precipitated. Such anomalies may be avoided by administering most of the tinctures, particularly of *Aconite, Digitalis, Fowler's Solution, Strophanthus* (where the dose is small), in the form of "Tabloids," which are gradually displacing *pills* and *powders*. Calomel, as usually prescribed by practitioners of the old school, is directed to be mixed with powdered sugar or gum; it may be thoroughly mixed when in the mortar, but as it is turned out on to the paper the heavier powder—*i.e.*, the calomel—settles to the bottom, the percentage of the calomel varying according as the powder is weighed from the top or bottom of the heap. The same argument applies to pills, the calomel being usually first mixed with some inert powder, and then worked up in a mortar with a soft extract. When the pills have been rounded they are frequently covered with a white chalk (French chalk) which affords an excellent protective against the action of the gastric secretion. Pills, moreover, become hard and insoluble through age, and numerous instances are on record where pills have been voided *en masse* in the fæces. "Tabloids" are entirely without these defects ; they are compressed lightly and readily disintegrate, either when placed on the tongue or in the stomach, if swallowed entire with water. Accuracy and simplicity of dosage are ensured, a state of things impossible when drugs are given suspended in mucilage, &c.

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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

CONTENTS.

THIRD SERIES, No. CCXXXIV.—JUNE 1, 1891.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. XX.—Puerperal Fever: its Nature, Prevention, and Treatment. By JOHN W. BYERS, M.A., M.D.; Physician for Diseases of Women to the Royal Hospital, Belfast; Physician to the Belfast Hospital for Sick Children; Examiner in Midwifery, and in Diseases of Women and Children, to the Royal University of Ireland; Fellow of the Obstetrical Society of London, and Fellow of the British Gynæcological Society—(*continued*), - - - 473

ART. XXI.—Histology of Tubercular Tissues treated by Koch's Tuberculin. By EDMOND J. M'WEENEY, M.A., M.D., - - - 486

ART. XXII.—Syphilitic Arteritis. By DR. PAUL LE ROUX. Translated by CHARLES GREENE CUMSTON, Student Associate of the Royal Academy of Medicine in Ireland; Assistant at the Butini Hospital, Geneva, Switzerland, - - - - - 490

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. The Natural History and Relations of Pneumonia: its Causes, Forms, and Treatment. A Clinical Study. By OCTAVIUS STURGES, M.D., Cantab.; F.R.C.P.; Physician to the Westminster Hospital and the Hospital for Sick Children, Great Ormond-street; and SIDNEY COUPLAND, M.D., Lond.; F.R.C.P.; Physician to the Middlesex Hospital. Second Edition, - - - - - 507

2. The Elements of Practical Medicine. By ALFRED H. CARTER, M.D., Lond.; M.R.C.P.; Physician to the Queen's Hospital, Birmingham; Emeritus Professor of Physiology, Queen's College, Birmingham. Sixth Edition, - - - - - - 511

3. The Medical Annual and Practitioners' Index. A Work of Reference for Medical Practitioners. 1891. Ninth Year, - - - 512

PAGE

4. Railway Injuries, with Special Reference to those of the Back and Nervous System, in their Medico-Legal and Clinical Aspects. By Herbert Page, M.A., M.C., Cantab.; F.R.C.S.; Surgeon to St. Mary's Hospital, and Lecturer on Surgery at its Medical School; Consulting Surgeon to the Cumberland Infirmary; Examiner in Surgery, University of Cambridge, - - - - 513

5. Illinois State Board of Health: Medical Education, Medical Colleges, and the Regulation of the Practice of Medicine in the United States and Canada. 1765–1891. Medical Education and the Regulation of the Practice of Medicine in Foreign Countries. By John H. Ranch, M.D., Secretary, - - - - - - 517

6. Notes on the Examination of the Sputum, Vomit, Fæces, and Urine. By Sidney Coupland, M.D.; Physician to the Middlesex Hospital, - - - - - - - - 518

7. Are the Effects of Use and Disuse inherited? An Examination of the View held by Spencer and Darwin. By William Platt Ball, - - - - - - - - 519

8. The Barbarity of Circumcision as a Remedy for Congenital Abnormality. By Herbert Snow, M.D. (Lond.), &c.; Surgeon to the Cancer Hospital, - - - - - - - 520

9. Lo Sperimentale. Anno XLV. Memorie Originale. Fascicolo I., - 521

10 Atlas of Clinical Medicine. By Byrom Bramwell, M.D., F.R.C.P., Edin.; F.R.S., Edin.; Assistant Physician to the Edinburgh Royal Infirmary, &c. Vol. I. Part I., - - - - 522

11. The Daughter: her Health, Education, and Wedlock. Homely Suggestions for Mothers and Daughters. By William M. Capp, M.D., - - - - - - - - 524

12. Clinical Manual for India, compiled for the Use of the Students of the Madras Medical College. By Dep. Surg.-Gen. C. Sibthorpe, F.K.Q.C.P., M.R.I.A.; Fellow of the University of Madras. Third Edition, - - - - - - - - 524

13. A Laboratory Course of Pharmacy and Materia Medica. By William Elborne, - - - - - - 525

Part III.—SPECIAL REPORTS.

Report on Midwifery and Gynæcology. By Andrew J. Horne, Fellow and Examiner in Midwifery, Royal College of Physicians of Ireland; ex-Assistant-Physician to the Rotunda Hospital, Dublin:—

Cæsarean Section and the Best Material of Uterine Suture, - 526
On the Treatment of Breech Presentations, - - - 527
The Vaginal Operation in Extra-Uterine Pregnancy, - - 528

Part IV.—MEDICAL MISCELLANY.

PAGE

Royal Academy of Medicine in Ireland:—

SECTION OF OBSTETRICS.

Subperitoneal Myoma of the Uterus. By Mr. O'Callaghan, - 530
Account of a New Form of Uterine Support, or Roller Pessary. By Dr. More Madden, - - - - - 530
New Instrument for Intra-Uterine Work. By Dr. More Madden, 531
Endo-Uterine Therapeutics. By Dr. More Madden, - - 531

SECTION OF ANATOMY AND PHYSIOLOGY.

Exhibits. By Dr. W. H. Thompson and Prof. Birmingham, - 534
Reports of Collective Investigations in the Anatomical Departments of Trinity College and the Catholic University Medical School, - 534
Variability of the Level of Attachment of the Lower Limb to the Vertebral Axis in Man. By Prof. Birmingham, - - 536

SECTION OF PATHOLOGY.

Cirrhosis of Lung. By Dr. Finny, - - - - 537
Histology of Tubercular Tissues after Treatment with Koch's Tuberculin. By Dr. M'Weeney, - - - - 537
Case of Syringo-Myelia. By Dr. O'Carroll, - - - 538
Septic Phlebitis. By Mr. Tobin, - - - - 539
Subconjunctival Lipoma. By Mr. Story, - - - 539

Sanitary and Meteorological Notes. Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F.R.Met. Soc.; Diplomate in State Medicine and ex-Sch. of Trin. Coll. Dubl.:—

Vital Statistics for Four Weeks ending Saturday, April 25, 1891, 540
Meteorology—Abstract of Observations made at Dublin for Month of April, 1891, - - - - - - - 545

Periscope:—

Creasote Hypodermically, - - - - - 525
Effervescing Powder as a Hypnotic, - - - - 529
Medical Education of Women in Edinburgh, - - - 529
Cardiac Ossification, - - - - - - 539
Pathology of Delirium Tremens, - - - - - 549
Excision of the Bladder, - - - - - - 549
Chewing Gum, - - - - - - - 549
The Metric System, - - - - - - 550
Exalgin, - - - - - - - - 550
Electrical Execution, - - - - - - 550
Benzoate of Guaiacol, - - - - - - 551
Forty Cases of Rib-Fracture from Muscular Action, - - 55
Hydrostatic Treatment of Inversion of the Womb, - - 551
Aristol for Lupus, - - - - - - 552
Endurance, - - - - - - - 552

Index to the Ninety-first Volume, - - - - 553

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JANUARY 1, 1891.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Multiple Neuritis, Illustrated by Clinical Cases.*[a] By J. MAGEE FINNY, M.D. Dubl.; President of the Royal College of Physicians of Ireland; Clinical Physician to Sir Patrick Dun's Hospital; King's Professor of Practice of Medicine in the School of Physic, Ireland.

THE subject which I wish to bring under the notice of the Academy is one of very considerable interest, and one not altogether devoid of novelty. It is, moreover, one which is not as well known as it deserves to be, and in connection with it every fresh case recorded will probably enlarge and render more accurate our information on some point or points in its ætiology or pathology.

I must, at the same time, crave your indulgence if the remarks I may make, and the conclusions I deduce, have been already and better made, in their writings and communications, by those who may be looked upon as authorities on such subjects, to the literature of the subject in the journals and works on nervous diseases.

It may be well, for the better elucidation of the subject—though quite unnecessary—to remind you that paralysis of motion or sensation, or of both, may be due to either central disease of the cerebro-spinal axis, or to injury of or disease of the peripheral nerves. Thus, a hæmorrhage into the brain substance or the motor paths in the pons medulla or spinal cord will manifest its

[a] Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, Friday, November 21, 1890. [For the discussion on this paper see page 71.]

presence by paralysis of motion of the muscles of the limb or limbs supplied by nerve force from these nerve centres; and again, the muscles of a limb may be powerless from injury or inflammation of the nerve trunks as they pass out from the cord, or of the nerves themselves, as they directly end in the muscles. In either case the limb is paralysed, but the seat of the disease and its nature are widely different. Hence the division of paralysis, as to whether it be "central" or "peripheral" in its seat, is both pathologically correct and clinically useful.

Extended clinical observation has met with many cases of paralysis of the extremities, which could not be attributed to transverse myelitis, to the spinal degenerations of locomotor-ataxy or spastic paraplegia, or to the rarer hæmorrhages into the spine, the presence of new growths, or the results of traumatism.

The cases to which I refer differ in their symptomatology and their clinical history and course so widely from those cases due to central disease that until the existence, as an entity, of peripheral nerve inflammation came to be recognised, very great difficulty was felt by clinical observers in classifying the paralyses met with in practice. Indeed, every physician who is in charge of an hospital, and enjoys a moderately wide practice, cannot but occasionally meet with cases of paralysis, involving motion and sensation to a greater or less degree, which he has considerable difficulty in recognising and greater difficulty in referring to any of the generally accepted pathological conditions of the brain and spinal cord. These difficulties I have myself experienced on many occasions, and in bringing under the notice of the Academy a few illustrative cases, which occurred within the last year, I feel sure I shall have the sympathy of some whose experience has been similar to my own; and I trust I shall elicit from others, whose special training in nervous diseases is wider and more cultured than I can lay claim to, much helpful criticism and useful information.

The cases of paralysis to which I particularly refer have certain general features of resemblance which connect them together in one group, and which help to distinguish them from paretic conditions, the result of central disease in the spinal cord or the brain. The most prominent of these symptoms is pain in the nerves and in their distribution to the muscles and the skin; and it is this early pain and paralysis, and its symmetrical distribution in the extremities, which gives the title of multiple neuritis, or, as the

result of inflammation of the nerve is that the paralysed muscles atrophy and degenerate, it is sometimes spoken of as multiple degenerative neuritis.

As a rule, the disease shows itself first in the feet and legs, and then in the hands and forearms, and its course and duration is chronic or subacute, lasting months and even years. Its termination also is usually in more or less complete recovery. This chronic course is, however, not invariably the case, as occasionally, and fortunately most rarely, the onset is sudden, paralysis attacks the feet and legs, and, rapidly involving the hands and arms, attacks the trunk and muscles of respiration, and ends fatally by suffocation or exhaustion within a few days, or a week at furthest. To this remarkable disease is given the name of acute ascending paralysis, first described by Landry.

Some years ago one such case came under my care in the City of Dublin Hospital. It was in the person of a young woman, aged twenty-five; and it ran its course in the manner I have described in about six or eight days.

I had never seen such a case before, nor have I met with one since; but from what I knew by study I took it to be one of acute ascending paralysis of Landry, and as such I published it in the *Brit. Medical Journal* in 1880.

A macroscopic examination of the spinal cord showed nothing abnormal, and I simply recorded it as an example of a strange and little-known disease. Since then and within the last twelve months, however, the pathology of Landry's paralysis has been the subject of many communications both at home and abroad, and various views as to its nature and pathology have been promulgated. Dr. Ross has most fully discussed this question in the pages of the *Medical Chronicle*;[a] and, basing his opinion upon the records of ninety cases which he has collected and analysed, he has come to the conclusion that the disease is not one of central origin—not an ascending central myelitis—but one of peripheral neuritis. Strümpell states that many cases of Landry's disease are really cases of multiple degenerative neuritis, while Nauwerck and Barth[b] go further, and say—"It has not been proved, even in the extended signification of the term, that acute ascending paralysis can be caused by disease of the central nervous system."

It is, however, not of "acute multiple neuritis" that I intend

[a] Medical Chronicle. Vol. XI. Nov. 1, 1889.

[b] Quoted by Ross. Ibid.

to speak (though, doubtless, much interest attaches to it), nor of the varied manifestations of neuritis known by the name of kakkè of Japan, or the beriberi endemic to many tropical or subtropical places; nor will I refer to leprous neuritis, nor to those paralytic conditions which have been met with in and following upon diphtheria, advanced cases of typhus and typhoid fevers, and the terminal stages of pernicious anæmia.

I wish rather to bring under the notice of the Academy some examples of the chronic or subacute disease which I have referred to as that which attacks the nerves of the extremities—either the feet and legs, or the hands and forearms, or both the upper and lower extremities together, with a remarkable symmetry, and of which the involvement of the sensory, vasomotor, and secretory nerves form a most prominent and distinguishing feature.

The ætiology of the disease is undoubtedly obscure, and in many instances quite unknown. One of my cases can be directly referred to exposure to cold, and in another subacute articular rheumatism seemed to play a part; while, again, a third was directly due to the poison of alcohol, which is acknowledged to be the most common cause of the disease, especially in women; and yet another may owe its origin to the obscure and nerve-depressing influence of Russian influenza. It seems to be a disease of adult life between thirty and fifty years of age, and, with the exception of one case of a young man, aged twenty-three, my cases conform to the rule.

The pathological condition of the nerves and nerve centres is as follows (I quote from "Gowers' Manual of Diseases of the Nervous System," 1886, Vol. I., pp. 95, 96):—"The distribution of the nerve changes, which are chiefly degenerative, varies in different cases; but, as in simple neuritis, the nerve inflammation is best seen at certain spots—where, for instance, a nerve pierces the fascia or winds round a bone. The nerves of the limbs only suffer in the majority of cases. The corresponding nerves on the two sides are usually affected. The musculo-spiral nerve in the arm and the anterior tibial nerve in the leg usually suffer first and in greatest degree, but often all the nerves of the limbs are involved. The spinal cord has been found healthy in most cases, though now and then more considerable changes (usually those of chronic myelitis) have been found in the cord. They are probably merely coincident."

From the foregoing brief summary of its pathology it will be

readily seen that the prominent symptoms should be those of *motor paralysis* and *sensory irritation;* while from the special involvement of the musculo-spiral nerve and the anterior tibial nerve the paralysis will be chiefly of the extensor muscles of the hands and feet, producing drop-wrist and drooping of the foot, more especially of its outer side.

I shall now relate to you the cases I have met, and thus practically illustrate the particular features of the disease :—

Case I.—*Multiple Neuritis affecting the Hands and Arms, with perversions of sensation, and vasomotor and secretory disturbances.*—James P., aged fifty-five, storekeeper, was admitted under me into Sir Patrick Dun's Hospital on July 21, 1890.

Twelve months ago he experienced a numbness in the second finger of his right hand, and soon afterwards in the other fingers of that hand, and then in the fingers of the left hand also.

About the same time a stinging "leaping" pain was felt in the distal palmar surfaces of the fingers, and for weeks at a time hard black spots appeared on the finger ends (the thumb alone being exempt). Considerable tenderness and pain on closing the hand was experienced, as well as shooting neuralgic pains at times through the fingers thus affected. These pains did not synchronise with the numbness, but sometimes the pain and sometimes the numbness predominated. He was, however, able to work as a fireman in charge of a small engine. He complained at that time of the effect of cold in his hands, and that on a cold night his fingers became deadly cold and white in colour.

Five weeks ago pains, with a feeling of trembling, attacked his forearms and arms as high as the shoulder, and off and on they still occur, being principally referred to the deltoids. The pain does not seem to follow any particular nerve, nor does deep pressure on the muscles produce pain. When the pain is severe in the arms, deltoids, and shoulders, the patient thinks his hands become blue and colder. The coldness and blueness of the hands and fingers is very marked, and more pronounced when the patient is up and about than when he is in bed, but even while in bed in the month of June this change was very perceptible. The skin over the fingers, front and back, is glossy and tight, so that it cannot be moved or pinched up from the underlying tissue.

Some days after admission to hospital, and the application of massage, the hands and fingers became bathed in perspiration. They no longer trembled, and were warmer than they had been for months. The grasp of the hand was fairly good, though less than might be expected of a labouring man, but the finer movements of the fingers were imperfectly performed, and a decided feebleness of the forearms and arms was present. On exposure of the deltoid vermicular muscular movements were visible.

There was no anæsthesia discoverable anywhere, to touch or temperature, or to pricking with a pin.

Unfortunately the hospital batteries were not in order, so that the electrical reactions could not be tested.

Full inquiry into the history or antecedents of the patient failed to elicit any probable cause of the disease, as there had been no previous illness or sore throat, nor was he exposed to any toxic influences, such as lead, and he denied having taken much drink, or having had syphilis, and careful examination of the organs and viscera showed he was free from organic disease.

The patient remained under observation a little over a fortnight, but being dissatisfied with the progress towards recovery he left very much in the same state as when he was admitted to hospital.

The symmetry of the disease, the shooting pains in the fingers and arms, the cold blue fingers and hands with profuse perspiration, the altered nutrition of the skin—all pointed to neuritis affecting the sensory as well as the motor nerves of the forearms and hands; and the case may be considered as an early stage of the disease, or, perhaps more correctly, a modified form of the disease with a limited area of distribution.

The next case I would refer to is a much more aggravated one, and in which the symptoms of pain, tenderness of the limbs, and increased sensitiveness of the skin were most pronounced. It differed in some respects, and to a marked degree, from the usual features of multiple neuritis, and I am quite aware that the presence of the tendon reflexes, faradic excitability of the muscles, and the very moderate muscular paralysis of the extensors of the wrists and ankles, give full grounds for questioning the propriety of including it in the class of nervous diseases to which I was led to refer it.

I am, however, quite at a loss to know under what other pathological conditions it could find a place, since the history of its onset, its distribution, course and progress to recovery, removed it from all central diseases of brain or spinal cord. Moreover, with special reference to the myotatic irritability which was present, it is not at all improbable that it may have been superadded upon pre-existing degenerative changes in the spinal cord, with some chronic meningitis. Be that as it may, I find that Dr. Thomas Buzzard[a] states that it will now and then happen that the knee-reflex may be not only present but somewhat exaggerated, and he records a case of alcoholic neuritis in furtherance of the view, and quotes another related by Dr. Oettinger, in which the knee phe-

[a] Paralysis from Peripheral Neuritis. 1886. Pp. 85-86.

nomenon is described as "notably exaggerated." In the sequel of this case it is right to add that the knee phenomenon disappeared.

Case II.—T. M'L., aged twenty-six, a labourer, from county Mayo, was admitted to Sir Patrick Dun's Hospital on June 20th, 1889, complaining of weakness of the extremities, with soreness and tenderness of the hands and feet.

Two years ago he was first attacked by a stabbing pain in his left hip, which he attributed to a chill he got while sleeping in a cold room. The pain remained in the hip for about a fortnight, and then ran down to the foot. He was treated for sciatica and had the hip blistered. Since then the pains have been alternately in his feet and in his hands—in the palmar surface of the latter and the dorsum of the former. Three months ago the pains and tenderness had greatly increased in his hands and feet, and his powers of using them decreased, so that now he cannot stand on his feet or open his fingers to grasp with his hands, or use a stick to support himself, or even employ them for raising himself in his bed. Hence his method of lifting himself to sit up in bed is peculiar, as he half rolls on his face and uses the under-elbow to act as a lever for that purpose. The left hand and forearm are less affected than the right. The patient says there are certain "blue spots" which are specially painful, and that these vary at times, and to these he attributes all the trouble.

Examination partially confirms this, as there are certain slightly reddish patches, with blue veins running through them, seen on the joints, such as the wrists and ankle-joints, as well as on the ball of the thumb and the sole of the foot. The colour of these spots was seen to vary under observation, and certainly when they faded or disappeared less pain was present. They also changed their position, and I failed to explain their occurrence by any theory of cutaneous distribution of the nerves or of blood-vessels, and they were quite unlike any gouty or rheumatic affection, or neuromatous nodules. The hands and feet were frequently bathed in perspiration, and when wiped dry were seen in a few seconds to be again covered with beads of moisture. This symptom also varied in its intensity. The fingers were kept constantly flexed in the palm, the thumbs being similarly, though less, affected, and the patient had no power to extend them, and if the fingers be forcibly opened he suffered great pain. In like manner the toes were flexed and the ankles extended, and any forcible flexion of the latter or extension of the former gave pain and caused outcry. The skin over the feet and fingers was very smooth and glossy, and could not be readily pinched up or moved. The muscles of both the forearms and the legs were atrophied, but owing to the extreme tenderness and pain their individual power could not be satisfactorily tested. Sensation seemed unaffected as to touch, to pain of pricking with a pin, and to temperature. The tendon reflexes were pre-

sent, and on the left side seemed to be rather exaggerated; while ankle clonus was elicited in the right leg. The patient had full command over the bladder and rectum, and there were not any bedsores. The urine was healthy—free from albumin and sugar; and there was an absence of all defects of hearing, sight, or speech, and except for an exaggerated interest in his symptoms, and attributing all his ailments to the "blue spots" already referred to, his mental and psychical functions seemed normal.

There is no history or evidence of either his having had syphilis or of being given to alcoholic excess.

The further progress of the case was towards recovery. The treatment adopted consisted of potassium iodide in combination with small doses of mercuric chloride, and daily massage to all the extremities. The left hand was improving fast when the pain returned owing to the patient having hurt it while dressing. In four weeks the patient was able to bear his weight on his feet, and by the aid of sticks to move about for two or three yards at a time; and by the middle of September he was able to dress himself, to get out of bed, and to walk without much pain about the ward. The pains varied, and after walking rather too much they returned for some days in the feet. The left hand he was able to open quite freely, and to grasp with it fairly well, but the fingers of the right remained flexed. The excessive perspirations ceased and the painful spots disappeared. Faradic electricity was applied to the muscles of the forearms in August by my colleague, Dr. Smith, under whose care he was for a time, with the result that muscular excitability of both arms was almost identical, but the force of contraction was considerably less in the left arm. It is right to mention also that ankle clonus was elicited about the same time in the right leg, but this was not a constant symptom, nor could it be looked for until the pains of moving the ankle had disappeared.

The patient left hospital on October 18th, after about four months' sojourn and treatment, very much improved in all respects.

Case III.—W. K., aged twenty-three, farmer, was admitted from the country under me into Sir Patrick Dun's Hospital on September 4th, 1889, suffering from complete loss of power in both legs, with pains in his shins and knees.

The patient is a tall, fair-haired man, six feet high, who, if his hands and legs were not seen, might readily pass for a healthy individual. He was unable to stand or walk without support, and when he attempted to walk it was noticed that he lifted the knee very high, and that the outside of the foot and toes had apparently a tendency to cling to the ground, and they struck the ground first on the foot being brought down again, and the great toe doubled under the sole. There was no ataxia.

The patient cannot attribute the onset of the disease to any particular cause, except it be to wet and cold. He states that he experienced pains in his head last October. Leaving the head, they went all over his chest and back, so that by December, 1888, he had pains all over him. Then for three months he experienced no loss of power of movement, but in March of the year 1889 the pain became continuous in his feet and legs, and he completely lost the power of movement of his limbs. He describes the pains of his legs as running down the shin bones and round the knees symmetrically, those in the right leg having preceded those in the left leg by some few days. Simultaneously with the appearance of the pains in his legs, darting pains shot round to his back, but there was no description of "girdle pains." The legs when examined were found greatly atrophied and particularly along the tibial aspect, the extensor muscles in the thigh being also much wasted. The feet hung down like the "drop-wrist" of lead palsy, the toes being flexed and the foot inverted. The great toe projected above the others, and seemed to have been injured while attempting to stand or walk, by striking against some obstacle. Indeed, while in hospital, he produced nasty bleeding sores at the root of the nail of the great toe of either foot by striking it against either the floor or his bed while attempting to get out of bed or walk to the fire. The atrophied muscles gave no response to a very strong faradic current, and galvanism in like manner gave negative results when applied to the muscles of the legs. The forearms were also feeble and wasted, but to a much less degree than the legs, and responded better to the galvanic than to the faradic stimulus. The excitability of the nerves remained while that of the muscles was lost. With the exception of the outer side of the left foot, sensation was completely lost in the legs below the level of the patella on the inside and a little lower down on the outside. There is an excessive growth of hair on the legs, particularly about the knees, and the feet are constantly bathed in clammy perspiration. Thus at the same time anæsthesia coexists with neuralgic pains and tenderness along the shin bones. The knee reflexes were quite abolished. The hands and forearms are much less affected, but the wrists and fingers "droop" considerably, and the patient finds difficulty in performing such actions as using a pin, &c. The grasp of the hands, as tested by the dynamometer, is very defective. There was no want of power over either the bladder or the rectum; nor were there any bedsores.

The treatment consisted of massage and electricity—both galvanism and faradaism—every day, and distinct improvement was noticeable shortly afterwards. He was also given iod. potass. with perchloride of mercury.

The urine, which was generally acid, was found on September 13 to be faintly alkaline, though free from either albumin or sugar. This alkalinity was, however, transient.

On September 25 he was able to be up each day, and by the aid of a friendly arm was able to take a few steps, and he made slight improvement in his powers of locomotion; and in November, when he went home to the country, his feet had ceased to sweat, also the nerve pains of the knees and shins were considerably less, and were the first symptoms to yield to treatment.

I heard from this patient in February, 1890, and he reported some, but not much, improvement. Again in May he wrote to say he could stand without extraneous help; and yesterday (November 9) I heard from him the following more accurate details, in reply to some queries I put to him, which show decided, though gradual, progress towards recovery. His hands and arms are, he says, quite strong, and his legs are improved, so that he can stand alone. The sweating of the hands and feet has ceased, with the exception of the toes of the left foot. The feeling in his legs and feet is not yet natural, and he has still some of the pains, but to a much less degree, and the sores on the great toes are not healed yet. He has no trouble in making water, though at times it is slow in passing.

The question of diagnosis in this case lay probably between multiple neuritis and spinal leptomeningitis. The preceding pains of some months' duration, followed by motor paralysis, atrophy, and the loss of sensation, might be referable to either causation; but the symmetrical neuralgic pains of the knees and tibiæ, the absence of all spasm or muscular contractions, the "drop" feet, the perspirations of the feet, the glossiness of the skin of the digits and the dorsum of the feet, along with the loss of patellar reflexes and the presence of complete control over the bladder and the rectum, formed a group of symptoms which belong to multiple neuritis, and which could not be produced by any central lesion, so far as I know.

The next case is an example of alcoholic multiple neuritis:—

Case IV.—A lady, aged fifty, with several children, was seen by me, in consultation with Dr. S. T. Gordon, twelve months ago.

The history was unmistakably one of alcoholic excess of some years' duration, as much as a gallon of whiskey having been consumed in three or four days. Dr. Gordon first attended her three weeks before she came under my observation, and he saw at once the character of his patient, and that she had become so addicted to drink that all the methods of bribery of servants, falsehoods, and deceptions, were being employed to obtain it.

Dr. Gordon had, however, restricted the amount to two glasses a day by means of a reliable nurse.

Her symptoms were, at first, seemingly those of alcoholism—as vomiting, a dry red tongue, with hepatic tenderness and enlargement, were the marked symptoms. Her manner and speech was peculiar, so as to suggest hysteria, while her temper was most variable, and at times so fitful and violent as to point to dementia.

Five weeks ago she complained of pains in her fingers, wrists, ankles, and toes, especially the big toe, and these were looked upon as being due to rheumatic gout—a view which gained confirmation by the history of her having had rheumatism five years ago, and the presence of a heavy cloud of lithates in the urine.

The symptoms and features and progress of the case, when seen by me, and subsequently to my visit, tally so closely with those of alcoholic multiple neuritis, that I shall simply refer to them in the order of their prominence and sequence.

At the time of my visit this lady was confined to bed, being unable to get out of bed or to stand. She seemed also quite unable to help herself with her hands, which she moved about in an awkward and almost affected manner. It was seen that the hands dropped at the wrists (somewhat like the drop-wrist of lead palsy). The extensor muscles were almost completely paralysed, and when she attempted to grasp with the hands she complained very much of the pain in her wrists and forearms. Movement of the legs also gave her pain, and caused considerable outcry, the pain being especially referred to the front of the tibiæ and across the toes, and particularly to the balls of the great toes. The muscles of both legs and forearms were wasted, the extensor aspects respectively showing the degenerative changes, and the motor power was decidedly deficient. Pressure over exposed nerves, such as the median and the peroneal, was extremely painful, while the muscles were sore to handling and deep pressure. Areas of diminished and again of exalted sensation were detected in the legs.

"Cutaneous hyperæsthesia is sometimes met in peripheral neuritis," says Dr. Ross,[a] "but it is quite overshadowed by an intense hyperæsthesia of the muscles, so much in some cases as to evoke loud cries from the patient on the slightest pressure."

The knee reflexes were completely absent. On account of the tenderness and soreness of the feet no examination could be made as to the presence of ankle clonus.

The pulse was always quick, 120–140. There was complete absence of fever. The tongue was red and "irritable," and the bowels were irregular, though there was no paralysis of the sphincter ani. There seemed to be, however, paralysis of the bladder, as she passed her water involuntarily under her. She was subject to various delusions, I was informed, and her manner during my visit was peculiar—such as one

[a] Ibid. P. 178.

might expect in a person who had taken too much wine—half-maudlin, familiar, and semi-hysterical. This manner, however, was not due to excess, as Dr. Gordon had restricted the quantity to moderate bounds, and a careful and reliable nurse carried out his instructions. A similar peculiarity of manner I noticed in the case of acute ascending paralysis of Landry, to which I have alluded.

The subsequent course of this case Dr. Gordon has kindly furnished me with, and it is gratifying to know that it ended in recovery.

The first sign of improvement was a cessation of the delusions; then she regained power over the bladder. The pains in the legs and hands next became less severe, though they have completely left her only last month (October). Even after these pains diminished, the power of standing had not returned, and she had to be carried in a chair downstairs; and the power of writing was so defective that it was with the greatest difficulty and ingenuity that she was enabled to affix her signature to an important document requiring it. In September she was well enough to go to Buxton for a month, although she still suffered from pain in both tibiæ, but in the left particularly, and walked with the greatest difficulty. She returned to Dublin at the beginning of this month, greatly improved, and is now able to walk into town, a distance of over a mile, and to go shopping. She still has pains across the toes, and has to wear large soft boots; otherwise she is in excellent health.

It is right to state that on two occasions, at least, the progress was arrested and retarded by her having managed to elude the watchfulness of those about her, and to get whiskey, but when again under restraint she rapidly regained the ground she had lost.

The treatment adopted in this case was principally the withholding of alcohol, the use of anodyne liniments to the painful parts, the internal administration of iodide of potassium and the perchloride of mercury, and the employment of massage and faradic electricity. To these latter Dr. Gordon attributes most credit.

Few words of comment are necessary to add to the description of this case. I wish, however, to call attention to one symptom unusual to general multiple neuritis and to the alcoholic form—namely, the loss of control over the function of the bladder, inasmuch as it has been generally accepted that the absence of this symptom is looked upon as a distinguishing feature of peripheral from central paralysis.

One may suggest possibly coincident central disease, or some form of reflex paralysis, or another phase of sensory perversion of the meatus as explanations, but at best they are but theories, and I prefer to simply record the fact and wait for further light to

say whether this symptom of incontinence of urine may not be found as an occasional, though recognised, symptom of multiple neuritis.

I cannot pass from this case without noting its favourable termination, and the all-importance of removing the poison which seemed to produce it. The prognosis in every case of multiple neuritis may in general terms be stated as favourable to its ultimate issue, but each case must be measured by the limits of its causation, the amount of paralysis, and the general health of the patient. Some cases may recover rapidly, others more slowly—perhaps extending over three or four years. Some may recover completely, or again others incompletely, leaving deformity from contractions of muscles.

It has been frequently noticed that pulmonary phthisis has been a concomitant, and often the cause of a fatal issue in multiple neuritis, and this coincidence, if not relationship, should not be lost sight of in dealing with the subject of prognosis.

The last case I would bring under your notice is a sad example :—

Case V.—A. B., aged twenty-eight, the mother of five children, the youngest eight months old, was seen by me in consultation last June (1890), and appeared to be in the last stage of multiple neuritis, which had ascended to the intercostal and facial muscles, and seemed to threaten death by asphyxia.

When I entered the sittingroom in which this lady lay on her back, sunk down on a sofa, with her feet extended beyond it, I was struck by the drop-wrists, as her arms lay semiflexed across her chest, and by the downward and inward position of the feet, so that the plantar surfaces looked towards each other. I had little difficulty in arriving at the conclusion that the lady was the subject of multiple neuritis.

A more careful examination confirmed this hasty opinion.

There was no general paralysis, as she could flex the forearms, and her grasp was fairly strong. In like manner she could flex and extend the thighs, but the feet and toes were absolutely powerless, and she was quite unable to stand or move them ; and there was also marked wasting of the muscles of the legs, especially of the extensors ; those of the forearms were but slightly atrophied, and this was explained by the fact that the wrist-drop had only appeared a few days ago. The reflexes both superficial and deep were absent, and there was no ankle clonus. Sensation was very deficient in the feet, and on the dorsum of the second and third toes of the right foot a vesiculo-pustular rash existed. The bladder and rectum were under control, although occasionally she wet herself. Flexing the foot gave rise to much pain, and deep pressure over the

muscles of extension of the foot and toes as well as along the course of the musculo-spinal nerves in the arms was very distressing.

The patient spoke in a thick and indistinct manner, and during the day I learned she had had many delusions and spoken to imaginary persons. A short purposeless cough occurred every few minutes, showing very little expulsive power of the thorax, and the act of inspiration was feeble and of expiration sudden and jerky. Her pulse was very shabby—130 in the minute, and the heart-sounds feeble; temp., 101°. Physical examination of the lungs failed to show any active disease, though percussion in the left subclavicular region was comparatively less resonant.

The view I took of this lady's case was that it was an aggravated one of multiple neuritis, and, in the absence of diphtheria as a cause, I considered it probably alcoholic in its origin. I advised abundance of liquid nutriment, including 4 ozs. of wine, bark and ammonia, with potass. iod., and the employment of massage to the whole body.

As to the probable ætiological factor, the medical man, her physician, concurred in the view I ventured to suggest, as for some time he had suspected that she had been in the habit of taking, or of being supplied with, port wine in large quantities whenever she seemed weak or nervous, and that probably four to six glasses was the daily average for some weeks.

It is, however, quite possible that the lesion may have been the direct outcome of the influenza from which she suffered in January, and after which she never felt strong.

This gentleman has most kindly supplied me with a complete history of this sad case, from its active onset in April to its termination by suffocation in September, and I cannot do better than briefly summarise his information and notes of the case, inasmuch as there are divergencies in some symptoms from those peculiar to multiple neuritis, and some additional features are superadded.

The lady had an attack of influenza in January, which left after it considerable weakness, and her nervous system was still further depressed by the sudden death of her father some short time before. Her symptoms and manner were, however, very like those of hysteria, and to this condition were attributed the pains in her legs, with some hyperæsthesia of the skin, of which she complained in April. Soon after she spoke of numbness in her feet her memory became defective, and she suffered from double vision and inability to read or sew.

On April 28th her condition became decidedly worse, as she fell on one occasion in coming down stairs, and she could hardly stand alone or walk. Her speech also was noticed to be thick. She could converse intelligently, but would forget almost immediately what she had been told. Pains of a paroxysmal shooting character now set in. Commencing in the lower limbs, they shot up the thighs and across the abdomen.

In the middle of May, in addition to the foregoing symptoms, which became worse, deep pressure on the muscles gave pain; at the same time blunting of tactile sensation was present in the feet and legs. She says she could move her legs but for the agony it caused her to do so. The pains were more severe at night and prevented her sleeping.

In the beginning of June strict orders—though it was doubtful if they were carried out—were given to stop the free allowance of port wine, of which her medical attendant was then for the first time made aware.

I saw her on June 27th, and by the aid of a skilled and trustworthy nurse the stimulant was reduced to one glass of port wine in the day and half a glass of whiskey in eggflip, and in a fortnight afterwards was completely stopped.

In July the forearms began to regain some power, as she could slightly extend the fingers, and there was no pain, although wasting of the extensor muscles of both forearms and legs was manifest.

In the month of August no change was noted, except that the pains in the legs had disappeared, and that the general condition was decidedly worse.

On the 2nd and 5th of September suffocative attacks set in, as her thoracic muscles of respiration were completely paralysed, and movements almost *nil*, and in these she nearly died. However, she rallied out of them, and although she passed her water under both before and during them, she was able to use the pan when directed to do so. Fæces, however, passed unconsciously.

On September 8th she became very restless and delirious, being under delusions as to the presence of persons in the room, with whom she held conversations. She was suspicious, and looking under the bed-clothes, and from side to side. She tossed her head about, sang hymns, and, in short, was a maniac. For forty-eight hours this restlessness persisted, and after two attacks of semi-coma, in which Cheyne-Stokes' respiration was well marked, she died quietly on September 11th.

Examinations of the lungs and sputa gave negative results as to the co-existence of tubercle, and the urine was free from albumin, though frequently tested.

Everything that could be thought of was tried in succession to bring down the pulse and temperature, but completely failed to have any such effect. An inspection of the temperature charts shows that a fever, ranging from 101·5° E. to 98° M., ran on uninterruptedly from June 27th to the termination.

The foregoing cases are, I consider, fairly representative of the disease under consideration, and of the various types I have myself met with. I trust, in the discussion to follow, some members will be able to add much more to our information on this subject, and

thereby supply the deficiencies of my communication and awake the interest which my paper lacked, and of which no one is more conscious than I am myself. I thank you much for your patient hearing and indulgent attention.

ART. II.—*How they went up Nile. From Gemai to Korti*, 1884. By BRIGADE-SURGEON ALBERT A. GORE, M.D., Army Medical Staff.

ON November 22nd there left Halfa for Gemai by train, at 7 a.m., 1 officer of the Medical Staff and 2 non-commissioned officers and 18 men of the Staff Corps, who took over on arrival three whale-boats with their equipment. Shipped 13 cases of medical stores at Sarras, arriving about sunset. They had a Canadian voyageur in each boat, and two interpreters accompanied them.

23rd.—Shipped two complete sets of Nile boat stores and 15 days' ordinary rations, and started at 4 p.m.

26th.—After a very laborious journey, a great part up rapids, reached Semneh, unloaded, and, with the help of Dongola natives, portaged their stores.

27th.—The three boats having been hauled up Semneh Cataract, they started onward at 7 a.m.

29th.—Reached Ambigole Rapids.

December 4th.—Having got through two portages, started at 3 p.m.

9th.—Reached Tangier Cataract at 3 p.m. Hauled up, and again started at 1 40 p.m.

10th.—Reached Akasheh. The boats were hauled up the rapids, and they started for Dal about noon, reaching there at 6 p.m., after dark.

12th, 13th, and morning of 14th.—Occupied in portaging and getting the boats up the rapids. Their voyageurs were taken away here. Fewer rocks, but more sandy shoals. Left to their own resources.

22nd.—Reached Kaibar Cataract.

23rd.—Started again. The wind rather failed, and they had to resort to "tracking" and rowing.

27th.—Reached foot of Hannek Cataract. Sailed and rowed up unaided. At sunset got to Abu-Fatmeh.

28th.—Started for Dongola.

29th.—Arrived at 6 p.m. Two of the boats had dropped behind.

January 4th, 1885.—Reached Debbeh at 4 p.m. Made only half an hour's halt, and had to track incessantly, as the stream was strong and there was no wind. The heat was great, and they were much pestered by myriads of sand flies.

8th.—Arrived at Korti between 2 and 3 p.m., 1 month 17 days from Halfa. All the boats in good order, and all the stores landed in good condition after incessant labour, which lasted every day from daylight to dark. Six men in each boat. The other boats had an average crew of 12 men. Owing to a block of boats ahead, nearly nine days were consumed in passing Ambigole and Dal Cataracts. Were it not for this they would have reached Korti in 39 days.

With the River Column—Field Hospital.

They arrived at Abu Dom on January 10th, 1885. Materials of No. 2 Field Hospital were in a marquee. Leaving the marquees behind, and taking only the most necessary articles of the Field Hospital and a sufficient supply of medical comforts, left on 20th in 8 boats, with 5 officers and 42 non-commissioned officers and men of the Medical Staff Corps; the crews completed from 1st Gordon Highlanders to 8 oars, a coxswain, and a bowman; a section (one-eighth) of the reduced Field Hospital equipment in each boat, the P.M.O. following in a ninth with a reserve of medicine, surgical equipment, and some special comforts.

21st.—Arrived at Handab, and joined Major-General Earl's column, consisting of the following regiments:—1st South Staffords, 2nd D. C. Light Infantry, 1st Royal Highlanders, 1st Gordon Highlanders, a squadron of the 19th Hussars, one Egyptian Camel Battery, one Egyptian Camel Corps, detachment Commissariat and Transport Corps, &c.

24th.—Advanced up river, and tracked up cataracts and rapids day by day, sleeping in zerebas at night, always accoutred, using tents only for the sick, and that but seldom, the enemy falling back as they advanced, now and then exchanging a few shots with the advanced parties. Berti was evacuated, and the people deserted their villages and fled.

February 10th.—At last the enemy made a stand at Kirbekan, near Dulka Island. Prepared five camel loads of the most necessary equipment for a dressing station; obtained camels to carry water; the men stood by their stretchers, and pressed up as closely as possible to the attacking columns, prepared restoratives, and

collected the wounded as rapidly as circumstances would permit into three groups, and afterwards removed them by stretcher parties to the bivouac opposite Dulka Island, where food was provided, dressings readjusted, and their wants generally attended to, accommodating them for the night on stretchers in boat tents. Carried them on from day to day in boats, sometimes landing them and placing them in tents, all having to work incessantly early in the morning and late at night in providing for their wants, both tedious and laborious when carried out in boats. Fresh meat rations were issued whenever obtainable.

24th.—Reached to within 22 miles of Abu Ahmed on the right bank, having crossed the river at Kebeh on the 21st. Here had orders for the column to return to Korti. The river had fallen some feet, and cataracts and rapids were more difficult to descend. On but one or two occasions had the sick to be removed from the boats and portaged. In the stern of each boat was stowed the heavy divisional boxes, medicines, field panniers, field companions, haversacks, &c.; amidships, boxes of provisions and medical comforts—foremost of these the Nile boat stores. The supplies proved ample while the column was in the field. The health of the troops was excellent.

Evacuation of the Dongola District.

Orders were received on May 12th, 1885, and the withdrawal commenced fifteen days afterwards, commencing at Merawi.

At Halfa.—Remained, one troop of 19th Hussars, half battery of Egyptian Artillery, the West Kent Regiment, one battalion of Egyptian Infantry, and the Black Egyptian troops from Abu Gus.

At Korosko.—One troop of 19th Hussars, the Egyptian Camel Corps, half battery of Egyptian Artillery, the Sussex Regiment, one battery of Egyptian Infantry, and Commander Baker's black troops.

At Assouan.—Remainder of 19th Hussars, one battery of Royal Artillery, the Essex Regiment, the Duke of Cornwall's Light Infantry, and two battalions of Egyptian Infantry.

At Cairo.—All other troops.

Arrangements were made on the line of communications for the establishment of rest camps with sun shelters, at intervals of about 10 to 12 miles along the river from Fatmeh to Railhead; also for 10 small hospitals, each with a *personnel* of 1 non-commissioned officer and 3 privates of the Medical Staff Corps; a pair of field

panniers, a pair of divisional boxes, a field companion, and medical comforts sufficient for 8 to 10 weeks. There was thus a small hospital for every two marches for men who might get sunstroke, sun fever, or other serious ailments, preventing them being carried.

The troops proceeded from Fatmeh by march route, in parties about 300 strong, leaving Fatmeh at about the rate of 1,500 a week, nine half battalions included, each having a medical officer, pair of field panniers, field companion, two boxes of medical comforts, water, one camel with cacolets, and 12 donkeys for sick. Each medical officer had a camel for riding and one for panniers. The march commenced at 5 p.m.; there was a halt midway for tea, coffee, &c., and it terminated at 7 a.m. The first four regiments to go down were the Royal Highlanders, South Staffordshire, Gordon Highlanders, and Royal Irish.

Three hundred sick at Fatmeh were at once removed in anticipation, at the rate of about 30 a day—the largest number which could be sent across the desert from Akasheh to Railend.

Provision was made at Akasheh for 200 sick, and 100 at Dal. The medical stores at Tani were sent down in the "Lotus" to Fatmeh in the first instance. There was at this time 16 hospitals from Assiout to Merawi—those at Assouan, Wady-Halfa, Abu-Fatmeh, Kurot, and Tani, of very large size; and others of medium dimensions at Akasheh, Sarkamatto, Dongola, Shabadood, Abu-Dom, Abu-Gusi, and Kaibur. Absarat, Sarkamatto, and Akasheh, were the hospitals in the line of march where sick might be left.

Halfa, Korosko, and Assouan were to be the future frontier posts.

At Halfa was left 1 brigade-surgeon, 1 surgeon-major, 3 surgeons, and 19 men of the Medical Staff Corps, and 100 beds.

At Korosko, 1 surgeon-major, 3 surgeons, and 19 men of the Medical Staff Corps, and 100 beds.

At Assouan, 1 deputy surgeon-general, P.M.O., 1 brigade-surgeon, 1 surgeon-major, 4 surgeons, 1 quarter-master, and 37 men of the Medical Staff Corps, and 200 beds.

Deputy Surgeon-General Lithgow, C.B., D.S.O., was P.M.O.; Brigade-Surgeon Archer at Halfa, and Brigade-Surgeon Ramsbotham at Assouan, senior medical officers.

Later an hospital was opened at Sarkahmatto and Abri, each of 25 beds, for the returning troops. Few men fell out, and those from blistered feet and chafes. No case of sunstroke occurred.

Boat Service for Conveying 30 *Sick from Abu-Fatmeh to Sarras,* 1 *medical officer,* 1 *non-commissioned officer, and* 3 *privates of the Medical Staff Corps with each. One-third of Sick to be carried, two-thirds to ride or walk over short portages;* 4 *bearers to each stretcher.*

Name of Stopping Place	Distance in miles below place by water	Length of Portage	Description of Route	No. of Boats	Porters	Donkeys or Mules
Abu-Fatmeh	—	3 miles	Flat, easy	3, 20 tons each	80	20
Kaibar	30	600 yards	Good and flat	3, 20 tons each	40	10
Amara	60	„	„	3, 20 tons each	40	10
Dal	20	4 miles	Fairly good	6, 5 tons each	80	20
Tanjour (Left bank)	22	3 miles	Heavy and sandy	6, 5 tons each	80	20
Ambigole	13	1 mile	Rough	6, 5 tons each	80	20
Semneh	19	300 yards	Fair	—	20	5
Sarras	9	20 yards	Easy	6, 5 tons each	20	5
	173	12 miles	—	—	440	110

It was the duty of the field inspectors to see that the field panniers of regiments were complete; to see that the medical comforts were packed in two boxes for camel transport, and to supply regiments arriving at Fatmeh without them; to see that the equipment for each small hospital was put together and ready for despatch—this equipment was obtained from surplus hospital stores at Fatmeh—and see that each medical officer to be in charge looked after the packing and stores of their respective hospitals; that proper precautions were taken to keep the rest-camps in proper sanitary condition, with especial reference to conservancy, filtration of water, and protection from sun; and that all hospitals in their district were prepared to meet all increased demands that might be made upon them for medical comforts and medicines; that a sufficient amount of lime-juice was stored at

the several places, so that each man passing could have an ounce per diem.

Fifty-nine bales, containing blankets, flannel shirts, belts, and palliasses, were sent to Fatmeh, where the stores of Nos. 1 and 2 field hospitals were arriving daily. The Surgeon-General, Dr. O'Nial, was then at Dongola, where a field hospital was still established. Hospital nuggurs, with some 15 to 22 sick, 3 men of the Medical Staff Corps, and a medical officer, were constantly passing—a pinnace, when available, expediting their journeys, aided by the "Lotus," which was also utilised. When there was no nuggur available to take on the sick to Fatmeh, they were received at Dongola, the empty nuggur returning to Kurot.

As each station was finally evacuated the hospital was broken up, all the sick without exception were removed, and the equipment was transferred to Fatmeh. Surgeon-Major Hill, under Brigadier-General Greufell (who was responsible for the movements of the troops downwards), was responsible as field inspector over the whole line of communications.

A steamer of the National Aid Society was sent to Assouan to aid in the conveyance of sick from that station to Assiout. She could accommodate 48 patients at a pressure, but with comfort not more than 24. She had the advantage of drawing very little water and making quick passages. Ordinary large barges were also in use, in which the sick were conveyed most comfortably.

May 29th.—Deputy-Surgeon General Lithgow arrived for duty at Dongola.

On the 30th Surgeon-General O'Nial, accompained by his staff, left Dongola at noon, and, completing a tour of inspection *en route*, arrived at Cairo, June 15th, and took over the duties, P.M.O., Egypt.

From Dongola to Cairo before the move.

The Surgeon-General left Dongola on May 30 in a whaler towed by a steam pinnace, which threw the party off after 14 miles, when they proceeded by rowing, going 7 miles further, when they anchored for the night.

At 6 30 a.m., May 31st, left their bivouac, and arrived at Hafir at 10 a.m. A regiment was quartered there in camp on the west bank and close to the river. The site was good, and there was considerable shade afforded by palm trees. All the troops were in huts, in the construction of which much care had been expended.

The huts were constructed of dourra stalks, and some of them had verandahs; they had double roofs; and there was a canteen, kitchen, and recreation room for the use of the men; a detached ward set apart for slight cases; all requiring admission to hospital being sent in a whaler to Fatmeh, 8 miles away. The camp was healthy, and the medical officer thought no cases of enteric fever had been contracted there. There were two Nile boat filters for use, supplemented by native zeers, with an ample supply of medicines, and a tolerably abundant supply of eggs, fowl, milk, butter, &c. Fresh rations were issued daily. Plenty of onions and pumpkins could be bought, and the men had gardens, where were grown radishes, lettuce, &c.

Left Hafir, and arrived at Fatmeh at 1 30 p.m. Most of the patients had been evacuated. There was hut accommodation for 70 patients, a reserve of hospital marquees, and straw huts for 165 patients.

Proceeded by land to Kaboddie, the north end of the Third Cataract, 5 miles. A sick convoy which arrived—9 officers and 32 non-commissioned officers and men—were accommodated in huts for the night.

June 1st.—Left at 8 a.m. with convoy, all proceeding in whalers, 4 to 6 in each, according to the gravity of the cases—patients requiring lying-down accommodation lying fore and aft on stretchers, two in each, travelling very comfortably. Each of the whalers had a crew of 9 Egyptian soldiers. The medical officer of the convoy had one to himself, with an ample supply of medicines, medical comforts, cooking utensils in it, and 4 men of the Medical Staff Corps. There were awnings for each boat. As the wind was strong they had to be taken down, but as the day was cool this caused little inconvenience. There were large umbrellas to hold over cases that required them. The Cataract of Shaban, 12 miles lower down, was reached in two hours, and the stretcher cases carried by land, a distance of one-fourth of a mile, the other sick remaining in the boats. Stopped for an hour at 1 p.m. to have dinner, and at 6 30 p.m. for the night, about 5 miles from Kaibar. Here the stretcher cases remained on their stretchers in the boats, the other patients disembarking and sleeping on the bank on their waterproof sheets. Each had his own blanket, an hospital blanket, and his great coat.

2nd.—Left the bivouac at 7 a.m. after the sick had breakfast, and arrived at Kaibar at 9 a.m., where the sick of the convoy

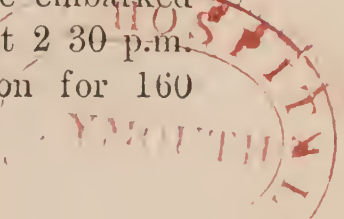
were detained in hospital to await the arrival of whalers to carry them on. There was accommodation for 50 patients in huts constructed of wheaten straw mats. The hospital was at the south end of the cataract. Left Kaibar at noon and arrived at Absarat at 6 p.m., where there was accommodation for 25 patients in straw huts, and plenty of tents available if required.

3rd.—Left Absarat at 7 30 a.m., and passed the rest-camp Said Effendi in the whaler at 9 a.m., 14 miles from Absarat, one of the several halting places erected for troops that were to march northwards. There was shelter for 500 men, composed of huts built of poles covered with wheaten straw mats, open at one side; a small commissariat depôt, and some donkeys and camels to assist weakly men when marching. Arrived at the next station, Koyehmatto, at noon, where was an hospital for 25 patients, field ovens, and trenches for latrines completed, medical comfort, medicines, 1 non-commissioned officer and 3 privates of the Medical Staff Corps. Left at 2 p.m., and arrived at Auchamath at 6 p.m., the next rest-camp, 11 miles from Koyehmatto. It was already prepared for 500 men.

4th.—Left Auchamath at 6 a.m., and arrived at Koseh at noon, the next rest-camp, 12 miles, and fitted up as the first. Left at 2 p.m., and reached Abri at 5 p.m., the next halting place, cool, and shaded by palms. General Grenfell, general officer commanding line of communications, and the Field Inspector, were quartered here. A 25-bedded hospital was located in a very good mud hut with ample room and a separate room for sick officers. Field kitchens, latrines, sun-shelters of straw and palm branches were ready for 500 men, but local supplies were scarce.

5th.—Left Abri in whalers at 10 a.m., and arrived 4 miles from Sarkamatto at 6 30 p.m., having passed Mograkeh, the intermediate rest-camp. on the way.

6th.—Arrived at Sarkamatto, left bivouac at 5 30 a.m., arriving at 6 a.m. There were only 7 Europeans and 6 Krosmen under treatment in the hospital hut. Excellent huts for 48 sick, and tents for 52, besides a hut for 2 sick officers. The sick convoys passed a night here on their way down. The hospital was well supplied with all necessaries. There were in addition some shelters for 500 men. Left at 8 a.m. on camels and proceeded to Dal, the north end of the cataract, a distance of 7 miles, where embarked on other whalers at noon, and arrived at Akasheh at 2 30 p.m. There was here most substantial hut accommodation for 160



patients—the huts built of mud and sun-dried bricks and roofed with straw and palm branches. Half the camel bearer company was here for the use of sick convoys crossing the desert. The camp was in a good sanitary condition—latrines, filters, &c., all ready and well looked after. There were only 7 patients in hospital. Left Akasheh at 5 30 p.m. on camels, and marched across the desert for 9 miles, and arrived at Tanjour Road at 11 p.m. The halting place was 5 miles from the Nile, from which water was carried by camels, and stored there for the use of convoys and troops passing through. There was tentage for 50 sick, and the sick convoys halted here for a day to rest the patients. Filters were provided and good latrines and sun-shelters for marching troops.

7th.—Left Tanjour Road on camels at 1 30 a.m., and marched by moonlight 9 miles to Ambigole Wells, the next resting-place. Here there was tentage for 50 sick, and a large straw hut to accommodate 60 patients. Water for animals (slightly brackish) was obtained from wells sunk 20 feet in the sand, and the water was pumped up as desired. The supply was abundant. Water for the men was conveyed on camels from the Nile, 4 miles away, and stored in wooden tanks for use. Filters were available, field trenches for latrines, and sun-shelters for marching troops. A reserve of camels was kept here for sick convoys and troops passing. The station was in telegraphic communication with Tanjour, Akasheh, and the Railhead. A convoy of sick arrived while they were in camp. Those unable to sit up were conveyed on stretchers carried by Egyptian soldiers (8 bearers to each), and those able to sit up were in cacolets carried by camels. Water, medicines, and medical comforts were carried by the convoy on camels. All seemed cheerful and comfortable. Left Ambigole Wells at 5 30 p.m., and arrived at Railhead (12 miles) at 11 30 p.m. The Railhead, or Ambigole Road Station, was 51 miles from Wady Halfa, but the railway embankment and cutting extended to Akasheh, and the rails were laid for 7 miles beyond Railhead. Drinking water was carried for the men from Sarras by the trains in iron tanks, and the animals obtained water from the Mohrat Wells, 3 miles distant, and to which place they were taken as required. There were tents at the Railhead for sick passing through, but, as a rule, the convoys did not delay there, but went into the train ready for them on arrival and on to Halfa at once. The carriages were arranged on Zavdofski's plan. Sick from the few men employed here were treated in Wady Halfa Hospital.

8th.—Left the Railhead by train at 10 20 a.m., and arrived at Wady Halfa at 2 p.m. The British troops lived in barracks constructed of sun-dried bricks, roofed with wheaten straw. The rooms were cool and comfortable, and arranged round the hospital in the form of a square, for military reasons. The outer walls of the huts that did not adjoin the river were loopholed. The men slept on warm palm-leaf cots, and kitchens, recreation rooms, canteens, &c., had been provided. The usual native filters were provided, and the dry earth system was in use. There was accommodation for 130 patients. There were only the sick of the corps in hospital, those arriving by convoys being despatched to Cairo. There were four nursing sisters on duty. The sick convoys from Halfa to Assouan proceeded in two different classes of boats—the "chaloupa," flush-decked boat, accommodating 50 or 60 sick, and the "dahabieh," which was decked forward, and had cabins aft. When on board the dahabieh sick officers travelled in the cabins; if on board a chaloupa a place was screened off for them. Serious cases slept on palm-leaf country cots; ordinary cases on mattrasses on deck. Dry earth was used for deodorising purposes. Fowl, sheep, and all other necessary supplies were carried, so that fresh rations were always at hand. Filters were also provided. These vessels were towed by steamers from Halfa to Assouan—the journey divided into three reaches, owing to the shallowness of the water at the present season. On arrival at a shallow the boat was cast adrift by the steamer and floated down to the station of the next. The shallows were not over a mile in length, some less.

9th.—Left Halfa in postal steamer at 4 a.m., passing a sick convoy in two chaloupas towed by a steamer, and arrived at Korosko at 3 30 p.m. A European regiment was quartered here in barracks built of sun-dried bricks and roofed with straw. The sick were treated in a similar building. The regiment had been so far healthy, although the temperature was high, owing to the radiation from the high hills which surrounded it on three sides. Left Korosko at 3 30 p.m., and anchored for the night.

10th.—Left at 4 30 a.m., and arrived at Shellal at 1 p.m., proceeding to Assouan by train, and arriving there at 2 p.m. Found a regiment of British infantry and some Egyptian troops quartered there. The barracks of the regiment were quartered on a hill about 100 feet high, and about 2 miles south of the town. The hill commanded a pleasant outlook over the river, and was probably

the coolest place near Assouan. The huts were of mud or sun-dried bricks, roofed with straw, well ventilated, and the men slept on country palm-branch cots; water was carried from the Nile by camels. The troops had fresh meat and vegetables, including potatoes, daily. The hospital was on the same hill as the barracks and constructed on the same type, with accommodation in buildings for 100 patients; was dieted and well supplied. There had been a great prevalence of enteric fever when the troops occupied the old camp at Assouan. There were then 2 officers and 62 men in hospital, including 7 of enteric fever, some of the latter dropped by sick convoys. The sick convoys proceeded from Assouan to Cairo on barges; four specially fitted up for the purpose. Each would accommodate 60 to 80 patients. They were very comfortable. Ventilation was secured by large port-holes cut in opposite sides and by the hatchways. Each had a double roof of thatch, and a separate part was cut off by a partition for officers; latrines were erected over the side; and all patients slept on palm-branch country cots. Live stock and abundant supplies were carried. The barges were towed, and the Nile was then, from Assouan to Assiout, divided into reaches on account of the river being so low. A barge took 7 or 8 days to get to Assiout, and about 10 to return to Assouan.

11th.—Left in postal steamer at 4 a.m.; arrived at Assiout at 2 a.m. The garrison usually consisted of 100 men. The barrack was in form of a square, the outside walls loopholed. Water was laid on from the general town supply. Rations and vegetables were good and abundant. The soldiers slept on palm-branch bedsteads. The hospital of 12 beds was established in a private house—4 rooms, 4 beds in each, with a kitchen, surgery, orderlies' room. It was surrounded by a large garden. There were then 10 patients under treatment. They lived on field rations, supplemented by chickens, eggs, milk, &c., as extras. They were on the regulation hospital bedsteads. Left Assiout at 8 30 a.m., and arrived at Cairo at 7 p.m., 13 days from Dongola.

Medical Staff, Egypt, Soudan, and Suakin.—May 1st, 1885.

Surgeons-General - - - -	1
Deputy Surgeons-General - - -	4
Brigade-Surgeons - - - -	6
Surgeons-Major, ranking as Lieutenant-Colonels -	26
Surgeons-Major - - - - -	28

Surgeons - - - - -	135
Quartermasters - - - - -	14
Apothecary to the Forces - - -	1
Total - -	215

Troops up Nile, 10,771; Suakin, 7,235; Lower Egypt, 6,730. Total 24,736.

Bearer Companies under Fire.—Action at Kassassin, August 28th, 1882.

All day the enemy maintained a distant cannonade, which kept not only our troops on the alert, but also those at Mahsameh and Mahuta. Late in the afternoon the Egyptians made a determined attack with a force estimated at 8,000 infantry, 1,000 cavalry, and 12 guns. General Graham's force defended itself vigorously. Our guns opened fire, and the cavalry after a short interval charged the Egyptian guns, scattering the guns and flying infantry. Our casualties were 15 killed and 90 wounded. Among the former was Surgeon-Major G. Shaw. Thirty-two stretchers and a full complement of bearers were available during the engagement. The hospital was freely shelled for two hours by the Egyptian artillery. Major Foster, D.C.L.I., was wounded at the hospital, and Private Holledge, Army Hospital Corps, when assisting to dress a case, was hit by a bullet on the head.

Tel-el-Kebir.

All tents were struck at 6 30 p.m. on 12th; the baggage piled. Each soldier carried 100 rounds, two days' rations, water-bottles filled with tea. When darkness set in the whole force—11,000 infantry, 2,000 cavalry, and 60 guns—marched silently into the desert, where it bivouacked on a ridge over the camp till 1 30 a.m., when it advanced across the desert on the strongly fortified position, in the darkness of the night, guided by the stars, and carried, at daybreak the whole line of the enemy's entrenchments with a simultaneous assault at the point of the bayonet, the cavalry division sweeping down on his line of retreat. The wounded were collected and removed from the field with quick promptitude to the field hospitals at the entrenchments on the canal, where everything was ready for their reception, treatment, and transport to the field hospitals at Kassassin, where two were established, and thence to the hospital ships in the harbour. To each division

half a bearer company was attached, and a special cacolet corps, consisting of 25 cacolets carried on horses, was organised for the rapid movements of cavalry. There were, in addition, 80 dhoolies and dandies, with a full complement of bearers. After a short interval the sounds of firing were heard, and some shells passed over the field hospital depôt. Behind one of the enemy's earth-works were several Egyptian wounded. The advanced field hospital was established here; on its right-front was the enemy's forsaken camp. By the afternoon the Staff and Army Hospital Corps were very much exhausted; the heat was great, and they had all been up the night before; all but 17 to 20 European wounded were dressed, and evacuated by midnight. The principal medical officer wrote—"I was myself a personal witness of the admirable manner in which the bearer companies and Indian kahars performed their duties on the field." The two field hospitals were afterwards established at Ghezireh.

Eastern Soudan, 1884–85.

On February 25th, 1884, the 1st battalion Gordon Highlanders and 2nd battalion Royal Irish Fusiliers left camp at Trinkatat at 10 a.m. to occupy Fort Baker, three miles off in the direction of El-Teb. Immediately after the men's dinners on the 28th the total force—1st and 2nd infantry, and Naval Brigade and corps troops, under the command of Sir Gerald Graham—followed; the equipment, medical and surgical stores, and medical comforts to form a dressing station, with water for the sick only, carried on 12 camels and 12 mules, with Quartermaster Enright and 38 non-commissioned officers and men, Army Hospital Corps, under the command of Surgeon J. Prendergast, followed immediately in rere, cacolets and litters being carried by each regiment and corps; in addition were 100 mules and drivers. When passing through the salt marsh of thick mud the men sank up to their knees, and the horses sometimes to their girths. Towards daylight of the 29th a heavy downpour of rain occurred, soaking everyone in camp. The dressing station—1 officer and 11 non-commissioned officers and men—was left at Fort Baker under Surgeon Prendergast; 27 non-commissioned officers and men, under the command of Surgeon H. O. Stuart, with cacolets and litters, accompanied the force. At 8 a.m. on February 29th the troops advanced in square formation, carrying their ammunition, one day's ration, great coats, and blankets. At 11 20 a.m. the enemy was found strongly posted

on the left flank, and at once opened on us with case, shell, and rifle fire. The case pattered inside the square chiefly, like hail; the shell, for the most part, passing over our heads, and bursting some distance beyond us. Within a few minutes we had a great number of wounded, and some killed. The wounded were immediately attended to, medical officers of corps accompanying the men to the ever-shifting dressing point in charge of Surgeon-Major Wilson. The troops were continually changing ground, and the wounded had to be carried with the square to avoid being cut off; not a single wounded man was left outside. This state of affairs lasted until the end of the engagement—between 2 and 3 p.m., when the wounded were grouped by regiments and corps near the wells of El-Teb. Our casualties were 4 officers and 14 men killed; 146 non-commissioned officers and men wounded; two naval medical officers were also wounded. On March 4th Tokar was evacuated, and the rescued inhabitants sent to Suakin. On March 10th following, at 6 30 a.m., a second advance was made in the direction of Tamasi. The day was sultry, and upwards of 40 men fell out on the way to the first zereba. At 1 15 p.m. on the 12th the force advanced from the first zereba, a distance of 7 miles, to their encamping ground, at 5 p.m., and were greeted by the enemy on arrival with a rifle fire at long range. Next morning after daybreak there was an almost constant Remington fire into and over our camp; some men, horses, and mules were wounded and killed. Two companies of the Gordon Highlanders being detailed to guard the zereba, the troops advanced at 8 a.m.—two squares in échelon, flanked by cavalry, and were soon hotly engaged with the enemy, particularly the square of the 2nd brigade, and numerous casualties occurred. While bending over a wounded man on a stretcher, Surgeon J. Prendergast was speared through the lungs. When the stress of the attack was over, and the enemy in sullen retreat, the wounded—about 100—were sent back on stretchers, under infantry escort. One year afterwards, in the fight at Hasheen, Surgeon J. R. Lane, Medical Staff, with No. 1 field hospital, was shot through the lungs, and died the next day; one of three officers wounded. In this action the right-half of No. 2 field hospital lost 2 men killed, and had 4 wounded.

Across the Bayuda Desert with the Bearer Company.

On the 8th of January, 1885, left Korti, Brigadier-General Sir Herbert Stewart in command of the whole of the camel corps,

with the exception of the light camel regiment; No. 2 and 3 sections of the bearer company, commanded respectively by Surgeons A. Harding and J. R. Lucas; 40 non-commissioned officers and men. 12th.—Reached Gakdul Wells; left for Metemneh on 14th. On 16th.—Enemy seen in force among hills near Abu-Klea by 19th Hussars, halted for breakfast, and soon after 1 o'clock advanced towards them—the main body of troops in column, with a broad front, then the transport, followed by the field hospital, bearer company, regimental baggage, and rear guard behind. At 3 p.m. halted; camels of escort and convoy massed in close order, those of field hospital and bearer company being in the centre, with an open space in front reserved for packing, equipment, and preparing stretchers, &c.; got ready the bearer company equipment, prepared the stretchers, opened one set of field panniers, unloaded water tanks. Four stretcher parties paraded under the command of Surgeon Lucas, Surgeon Harding, with remainder of non-commissioned officers and men of company, and some Aden drivers, and formed a low stone zereba on right flank of baggage, working until dark, when the enemy having commenced a brisk and accurate fire, beginning to take effect on the troops, he marched the party back to the centre of the square. Two stretchers were despatched to each medical officer doing duty with troops to bring in wounded during the night. At daybreak the firing was more brisk, and was directed principally on the front face, where most of the troops were massed. Four stretcher parties, under Surgeons Harding and Lucas, now took up a position on the left flank to bring in any cases of wounded to the field hospital, which was practically the dressing station. During the night and morning 4 officers and 16 non-commissioned officers and men were brought in wounded, and 3 dead. At 9 30 a.m. on 17th, with exception of Royal Sussex and details left to guard the zereba, the whole force in hollow square, with Royal Artillery and bearer company in centre, advanced towards the enemy's position. The firing being continuous and accurate, men began to fall immediately they moved off. The first four or five cases were sent back to hospital; but after that they were picked up and placed on stretchers, and then on litters and cacolets, according to the nature of wounds, when occasional halts gave an opportunity. Surgeon Magill, Guards camel regiment, was seriously wounded while attending a man. Advanced in this formation for about a mile and a half. Number of wounded at that time was 12.

Enemy now seen in large numbers on the left front, both cavalry and spearmen, with a large number of flags. They rushed on with great determination and courage, striking the left corner of the square, which was pushed back. In the *mêlée* camels got loose, were thrown down and killed, and a number of wounded in cacolets and litters speared, only a few escaping. After half an hour's desperate fighting the enemy were forced to retire, leaving about 70 of our men and 700 of themselves dead on the field. In the battle of Abu-Klea lost 9 officers and 59 men killed, and had 9 officers and 70 men wounded. The Bearer Company lost heavily in animals and equipment, and two of the camel drivers were killed and a private of the Medical Staff Corps severely wounded. The square having by this time re-formed, the wounded were collected and dressed, and the missing equipment recovered as far as possible. Many camels having been killed, the cacolets which they had carried had to be abandoned. At 3 p.m., the wounded (15 officers and 56 men) having been arranged into three classes—viz., those able to sit in cacolets, as many lying down on litters as there was accommodation for, and the most serious cases on stretchers carried by the Bearer Company and 70 regimental fatigue men, the column started for the wells, reaching them at 4 p.m., greatly exhausted by fatigue and want of water. The wounded were then made as comfortable as possible for the night, but they suffered a good deal from the cold. Beef-tea and brandy were supplied to all, and they were accommodated as far as possible on stretchers, the worst cases having the preference. At 7 p.m. the mounted infantry returned to the zereba, escorting sufficient cacolets and litters to be placed at the disposal of the medical officer who was remaining with those previously wounded at the zereba. These returned on the morning of the 18th, at 7 30 a.m., bringing 4 officers and 16 men, together with the wounded in yesterday's attack on the square, and were placed in an hospital established for the purpose. At 4 p.m. the whole force, with the exception of two companies of the Royal Sussex, left as a garrison, started for the river bank south of Metamneh, marching throughout the night. In the darkness it was impossible to keep in proper order; the animals, tired and hungry, tried to feed on everything within their reach; the men sleepy, and frequently falling off the camels. Several cases had to be carried on cacolets. At daylight of 19th order was restored, and an advance made to the river. About

8 a.m.. when distant about two miles, the enemy were seen in large numbers. The camels were again massed, and a dressing station opened in the centre, a shelter being made with cases, pack saddles. &c., as far as time allowed, the fighting portion of the force being formed round the animals. The enemy shortly opened a galling and accurate fire, and wounded began rapidly to be brought in to the dressing station, Sir Herbert Stewart being one of the earliest hit. The dressing station was, owing to the rapidity of movements, considerably exposed, many of the casualties occurring in its immediate vicinity. One officer, 1 warrant officer, and 21 men killed, and 8 officers and 85 men wounded. About 2 p.m. the whole force (with the exception of about 200) formed square, with 18 non-commissioned officers and men of the Bearer Company, 20 pairs of cacolets and litters, one pair of field panniers, and four water tanks, under the command of Surgeon Harding, with two surgeons acting regimentally, and advanced to drive the enemy from their position, and seize upon a site upon the banks of the river. As the fire of the enemy continued heavy, several casualties immediately occurred, those hit during the first 200 yards being sent back to the zereba; after that, carried on stretchers or camels, as opportunities offered. After advancing about a mile the enemy's spearmen appeared in large numbers, with the evident intention of charging the square, but were driven off by the rifle fire with considerable loss. The opposition then practically ceased, and the square advanced slowly to the river bank, arriving there about dark, with 3 officers and 31 non-commissioned officers and men wounded, 10 men having been killed.

A site having been chosen for a temporary hospital, the wounded were all re-dressed, and medical comforts, &c., administered; they felt the cold a good deal, but were covered as far as practicable, nets of baggage camels being used as beds for those not having litters or stretchers. Next morning a village, distant about half a mile, having been occupied, the wounded were removed to it on stretchers, &c., an hospital established, with a medical officer, a corporal, and 5 men detached from a section of Bearer Company. The remainder of the Bearer Company then returned with the troops to the zereba, and preparations were immediately made for the removal of the wounded to the village. They were arranged in three classes—viz., those able to sit up in cacolets, those for whom there was accommodation in litters, and the remainder (those most severely wounded) on stretchers, carried by fatigue

parties furnished by various corps, all the men of the Bearer Company, with the exception of four of the stretcher detachment, being necessarily employed in looking after the wounded in litters, &c., supplying them with water and comforts when necessary. Started at 2 30 and reached the village at about 4 30, when the severer cases were put in beds that had been collected during the day, the remainder being placed on stretchers outside the huts, every wounded man having a bed of some kind to lie upon. On morning of 21st all available troops at 5 a.m. formed up to advance on the village of Matemneh, the Bearer Company with all available men and camels accompanying the force. Nearing the village they were met by a severe fire, including round shot, from the guns mounted on the walls. About 9 a.m. were joined by 4 steamers belonging to General Gordon, who landed some of these guns. Our troops then retired from their position between the town and river, and, in conjunction with guns from the steamers, shelled the town till 11 a.m.; then retired, having lost 1 officer, and 1 non-commissioned officer wounded. On return to the village, preparations were immediately made to move the whole of the sick and stores down to the river bank, and to build a fort there. This was done in the afternoon, the wounded, numbering 10 officers and 93 non-commissioned officers and men, being carried down by stretchers and camels, and an hospital established as well as circumstances would permit. On the morning of 22nd shelters were made for all with what tents there were, and the tentes d'abri of the Bearer Company and blankets.

On January 31st a large convoy of 1,000 camels, carrying provisions, and escorted by 400 men of the Heavy Camel Corps, under the command of Lt.-Col. Talbot, 1st Life Guards, reached Matemneh, having exchanged a few shots with the enemy. With it was No. 1 section of the Bearer Company from Gakdul. On February 1st it was reported that Khartoum had fallen. Fifty sick and wounded at 8 p.m. on that day were sent back to Gakdul in cacolets and litters. The night was intensely cold, and many halts had to be made to attend to the several wants of the sick and wounded. Abu-Klea was reached at noon the following day without any casualty having taken place. At Abu-Klea 66 additional wounded were placed in cacolets and litters, and on pack animals, and at 4 p.m. the sick convoy, numbering now 109 sick and wounded, started for Gakdul, where it arrived on February 5th. Having captured a large flock of sheep en route, fresh meat was available for two days. They were,

on the 8th, evacuated to Korti. Throughout the entire journey the wounded were carefully attended, and the food they received was excellent and abundant. No. 1 section and some details returned to Matemneh, which was reached on 11th. On the 13th the Headquarter Bearer Company left for Abu-Klea, en route to Gakdul, with 69 sick and wounded, including Major-General Sir Herbert Stewart, who had been dangerously wounded in the abdomen on January 19th. He and five other bad cases were conveyed on stretchers by Egyptian soldiers—ten men being told off to each stretcher. The convoy halted at 10 a.m. to allow of nourishment being given to the patients, and at 11 a.m. were ready to move on, when they were suddenly attacked by the enemy, who for a considerable time kept up a well-sustained fire on our men, wounding 6 European and 29 Gordon's Egyptian soldiers, several of whom had accompanied them from Matemneh. Two died in a couple of hours; the wounds of the others were dressed, and they were placed in cacolets and litters. At 2 p.m. the convoy again started, reaching Abu-Klea at noon the following day, again starting with 20 additional sick and wounded. On the 16th Sir Herbert Stewart died, and was buried the following day at Gakdul. The bullet had entered over the left anterior superior spine of the ilium, and had impinged against and fractured the back part of the bone near its junction with the sacrum. The fracture was extensive and starred. The bullet had lodged in the upper part of the sacro-iliac synchrondrosis, death resulting from exhaustion. On February 20th Surgeon Lucas returned to Abu-Klea with 9 non-commissioned officers and men Medical Staff Corps, 24 pairs of cacolets and litters, chloroform, and medical and surgical stores—a report having been received that General Buller had been attacked by the enemy, and had suffered a loss of 28 wounded. The convoy of 33 sick and wounded for Korti, left in charge of three medical officers, 87 convalescents being evacuated with them, followed on 25th by 64 sick. On 26th those who were severely wounded at Abu-Klea, and a few cases of fever, arrived at Gakdul.

On the 27th the whole of the sick and wounded were evacuated to Korti from Gakdul. Korti was reached on March 4th. On the 6th the Bearer Company was again ordered across the desert to render aid to the force retiring from Gakdul under the command of Major-General Sir E. Wood, V.C., but only proceeded to El Howeiat, returning with all sickly men, and again reaching Korti on March 11th. Before starting every morning each patient

had his breakfast; a halt was always made at 10 a.m. to give the more serious cases beef-tea, milk, and brandy, while the convalescent had an opportunity of eating some of the ordinary rations. At 4 p.m. the convoy halted for the night, when the patients were given tea, soup, &c., and those requiring it had their wounds dressed. Although every drop of water had to be carried over a distance of nearly 200 miles, on no occasion did any one want any. The duties were of the most trying and arduous nature, with a large sick convoy, and were incessant day and night. In addition to the special duties of a Bearer Company all those usually devolving upon a field hospital had to be performed. The behaviour of the men left nothing to be desired, stretcher parties going out under a heavy fire as quietly and unconcernedly as though at a parade at Aldershot. The camel was found to be well suited for the carriage of sick and wounded, being quiet, docile, long-suffering, and unconcerned even under the heaviest fire; worked hard when well and regularly fed, and specially selected for his work—the largest and the heaviest being the best for carrying sick and wounded. Eleven hundred and sixty-one wounded, sick or footsore, soldiers were carried by the Camel Bearer Company during the operations across the Bayuda desert.

After the action near Matemneh, Sir Charles Wilson wrote:—"Before lying down I went to see the wounded who were having their wounds dressed. The medical officers behaved splendidly—nothing could have been better. They had been up three nights and through two fights, and here they were working again the fourth night. One of them fainted from exhaustion, but they went on until every wounded man had been attended. The Bearer Company also behaved admirably, not a wounded man was left on the ground; everyone was at once picked up and put on a cacolet, or a camel, or on to a stretcher. The hospital after a fight is a horrible sight, but the men bore their wounds bravely, and were much quieted then."

The force remained entrenched at El Gubat till February 14th, when, being reinforced by the Royal Irish Regiment, and half battery of the Royal Artillery, it commenced its return journey on the 14th of February, 170 miles to Korti.

(*To be continued.*)

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON ANATOMY.

1. *Quain's Elements of Anatomy.* Edited by Edward Albert Schäfer, F.R.S., and Geo. Dancer Thane. Vol. I., Part I., Embryology; and Vol. II., Part I., Osteology. Tenth Edition. London: Longmans, Green and Co. 1890.
2. *Anatomy; Descriptive and Surgical.* By Henry Gray, F.R.S., &c. Twelfth Edition. Edited by T. Pickering Pick. London: Longmans, Green, and Co. 1890. 8vo. Pp. 1,051.
3. *Traité Elémentaire d'Anatomie de l'Homme.* Par Ch. Debierre, Professeur d'Anatomie à la Faculté de Médecine de Lille. Tome Second. Paris: Felix Alcan, Editeur. 1890. 8vo. Pp. 1,064.
4. *Guide de Dissection et Résumé d'Anatomie Topographique.* Adaptation française du manuel d'Anatomie Pratique de D. J. Cunningham, M.D. Par le Dr. P. Kuborn. Liége: Marcel Nierstrasz. 1860. 8vo. Pp. 382.

1. For some time the advent of a new edition of Quain's Anatomy has been looked for with some impatience by those teachers and students who regard "Quain" as their anatomical Bible. The last edition—the ninth—was published in 1882. Since that year many and great advances have been made in the various branches of Anatomy, but more particularly in Embryology, and it was felt that these advances should be recorded in the standard text-book of the subject in the language. It is an interesting matter to watch the periodical appearance of such a well-known work, in different garbs at different times, introduced by different men, but still possessing the same striking features which have secured for it the place which it holds in literature. The present edition of the work under notice is introduced by Professors Schäfer and Thane; both gentlemen have already taken part in an earlier edition, with a third collaborator, who has, we regret, since passed away. Let us say at once we welcome heartily the new edition—

as much as has appeared—for its perusal has been a most pleasant and instructive undertaking. This edition—the tenth—differs in many respects from its predecessors, but most strikingly in its outward appearance. We have been accustomed to look upon and to think of Quain's Anatomy as two good stout volumes; now it is about to appear in, we believe, six separate parts, which will constitute three volumes; two of these parts have already appeared, the size of the pages is increased, but each part forms a thin and portable book, which is seemingly perfect in its production and attire. The change in shape and size is decidedly for the better; the light, well bound, and sleek volume is even, externally, suggestive of good things inside; in addition, the portability of the parts is an advantage. The printing is excellent—bold, clear, and striking, and the illustrations—a very large number of which are new—cannot be too highly praised.

Volume I., Part I., the work of Professor Schäfer, is devoted to Embryology. It is unnecessary to criticise the character of the section of this Anatomy devoted to Embryology; it has always been a full and thorough exposition of the subject read in the light of the most recent research. In the present edition the rule holds good; in it we find the usual careful and complete account of the development of the body and its various organs. In former editions this division of the work was largely, of necessity, comparative embryology, but nowadays, owing chiefly to the excellent work of His, the development of the human embryo has bean more thoroughly investigated, and it has become possible to make the division more purely human embryology than heretofore. The magnificent results of His, as well as his illustrations, are freely made use of, as well as those of many other recent investigators—all the advance that modern embryology has made is given in brief and concise language, including a pregnant paragraph on Weissmann's theory of heredity.

Particularly good accounts are given of the development of the central nervous system—of the ear, the eye, the heart, of the blastoderm and early embryo generally. The development of the muscular and skeletal systems are much more complete than in the ninth edition, but the lymphatic system is still dismissed in a few words. Beautiful new illustrations, many of them coloured, have been added; special mention might be made of those illustrating the placenta, the fœtal membranes, the central nervous system, the digestive tract, the heart and large vessels—indeed there are

few parts which have not been enriched in this respect. From the point of view of the *ordinary* medical student, this account of embryology is too long and complex; very few students can hope to master its details during the ordinary period of medical studies; still it is right that in a representative work a representative description of the subject should be found. For this reason particularly we are glad that this division of the Anatomy has been taken out of the general body of the work and put in a separate part.

Volume II., Part I., treats of Osteology; it is the work of Professor Thane. The subject is handled upon the same lines as in the ninth edition, but with many decided improvements. In the first place, it is an improvement to put osteology in a separate convenient part. Secondly, there is a most marked advance in the illustrations, and this is a matter of great importance in such a subject as osteology. In former editions the pictures of the bones were small, and as a consequence somewhat crowded and indistinct; now many of the bones, including all the larger ones, get full-page illustrations, and the smaller bones are equally well treated. Not only is the size changed, there is also a marked improvement in the style. Almost all the pictures are new; they have been drawn with the greatest skill and truthfulness, not from imaginary but from real bones, and the effect is certainly most satisfactory. We consider that they are by far the most perfect reproductions of bones—the cleverest and the most truthful that we have ever seen. The descriptions, too, are much improved, particularly in the direction of fulness; at the same time there is an evident and thoroughly successful attempt to read the descriptions off the face of the bones, without any great call upon the imagination. There is a judicious reference to the portions of osteology which bear upon anthropology, without excessive detail, just enough to arouse the interest of an intelligent student, and possibly to lead him to seek for more information on the subject. Altogether the osteology is a most careful and graceful bit of work, pleasant in the reading, accurate in detail, and complete in every way.

Summing up our opinion of the two Parts which have already appeared, we may say we are thoroughly pleased with them. We commend them with words of the warmest approval, and we are glad to be able to congratulate the gentlemen to whose care they have been entrusted, upon their successful efforts to sustain and advance the usefulness and reputation of a famous work.

2. There is, we believe, no medical work which has such a wide reputation, as a student's text-book, throughout the English-speaking world, as Gray's Anatomy. What student does not know of "Gray?" How few are there who do not possess the work? After all, popularity and success are the best test of the usefulness and worth of a book. Gray would not be the text-book adopted and read by the majority of students, year after year, and generation after generation, until now it has become a veritable patriarch among books, had it not within it the one great element of success—suitability. It was never written, we believe, to be the standard anatomy, the standard work of reference in the language; it was intended for a student's text-book, written in plain language, on practical principles, to be used by the student in his anatomical studies as a guide and friend. How far it has accomplished this object can be best judged by its wonderful popularity, and its numerous editions. In Ireland, certainly, no book is so generally used by students as the Anatomy under consideration. This edition, like its predecessor, the eleventh, has been brought out under the able editorship of Mr. Pickering Pick. When, a few years ago, we first saw the eleventh edition, we were struck by the great advance then made, and we were not prepared, after such a short interval, for any great change in the new volume, but we have been agreeably surprised. We have found in the new edition even more solid and important advances than the eleventh showed in its day. We refer particularly to the excellent additions in applied anatomy—surface-form, topographical and surgical anatomy. Mr. Pick has certainly placed the student in a most favourable position for turning the anatomical knowledge which he has acquired to practical account.

After the description of each bone, joint, or other important structure, comes a most carefully-written paragraph upon the surface-form of the part, the shape, as it may be made out from the exterior, followed in many places by another well-knit paragraph on the surgical application of the facts already communicated. The result is certainly most satisfactory. We wish to congratulate the editor upon the important improvement made in this direction. We feel that this applied anatomy should come as we find it here, in the body of the work, after the description of each part, so that the student may come across it while the ordinary details are still fresh in his mind. We do not think that applied anatomy should be totally relegated to a special division of the

book, or to a separate volume. Practical details cannot be too frequently brought under the notice of the embryo surgeon. Besides this improvement which we have alluded to, there are several other directions in which there is a decided advance. The descriptions as a whole are more carefully written, and in many places more accurate. The chapter on development is brought into line with the times, particularly in its earlier stages, so that now it presents a short but clear account of the development of the body, as far as the ordinary student requires to know it; and to the ordinary student we warmly recommend its perusal. It will explain many things which would otherwise remain inexplicable.

Lastly, the illustrations are much improved, chiefly by the addition of new plates, and the omission of less useful ones. There is a particularly good new diagram illustrating karyokinesis, and several new sections from Braune. We miss illustrations showing the true shape of the pancreas and spleen; and we think the new illustration of the liver, after His's idea, ought to be made more use of. An old, faulty plate of the liver might be spared. The illustrations of the bones have always been a great attraction for the student, owing to the colouring of the attachments of muscles. We are doubtful of the wisdom of this plan. To the student it certainly appeals; it makes him clear as to the extent of attachment, but we fear these coloured lines are too obtrusive, and tend to distort or to conceal the true appearance of the bone—for instance, in the case of the fibula. It is always comforting to a student to get an exhaustive and detailed description in simple language; students like detail, they seek for it, without it they are unhappy. This detail they get, we fear, in excess in the descriptions of the bone; they are full to excess, and frequently pedantic; there is a tendency to make mountains out of mole-hills, and to make mountains no more; borders and lines or ridges are frequently described with extravagant detail—occasionally even where such borders are not to be actually seen. Besides, there is a tendency to draw as many things as possible together to one point or line, and to heap them all up there. It would be better if the bones were described as they really exist, and as they can be seen. We are glad to see that a more careful application of terms than heretofore is to be found in the descriptions of the metacarpals. The articulations are well and carefully done, as are the muscles and fasciæ. A new illustration is introduced to show the arrangement of the palmar fascia, which we cannot welcome. The

old idea of the external rotating action of the ilio-psoas is still followed, and we notice some minor points to which we might object in the attachment of muscles, but they have possibly been left so for simplicity's sake. Useful additions are the diagrams after Charcot, illustrating the blood-supply of the brain. The arteries have always been well described in this work, including their surgical anatomy. In the account of the central nervous system there is considerable improvement, where improvement was much needed; still a good deal remains yet to be done. We should like to see a more connected, a more practical, and withal a more intelligible and simple description of this important region. As we have said, much, very much, has been done in this edition. We hope for further improvement. We miss, with pleasure, the account of the fillet, as well as a diagram which was innocently intended to elucidate the course of the fibres in the medulla in past editions. There are a few very good pages on cerebral topography which we consider a valuable addition, and we cannot help wishing that Mr. Pick had given us a few of his excellent paragraphs on the applied anatomy of the central nervous system, though it be chiefly of medical interest. Some of Flowers' diagrams of the distribution of the cranial and sympathetic nerves have been introduced with good effect. The peripheral nerves generally are carefully and well treated. We may say the same of the abdominal and thoracic viscera, but we should like to see added some new illustrations of the spleen and pancreas, of the kidney (the minute anatomy of which is already thoroughly illustrated), and of the heart. The remaining parts of the volume, treating of the organs of special sense, the urino-genital tract, herniæ, &c., have been all carefully attended to.

We have often thought that it is a pity to see so much of the book devoted to histology, when, at least in this country, the student never uses it as a text-book for this subject; it is the rule among students to have a special book on histology. We would suggest, from the practical point of view, that all minute anatomy beyond naked-eye work should be left out, except in the case of the organs of special sense—thus more space would be found for matters of more importance to the student of macroscopic anatomy.

Finally, it is our opinion that the present edition has made a well-marked and solid advance towards perfection, and again we congratulate the editor upon the success of his work.

3. We have already reviewed the first volume of Professor Debierre's work. The second volume completes the subject. In it the author treats of the central nervous system, the organs of sense, the digestive and respiratory apparatus, and the urino-genital system. After the anatomical description of each organ there is a full account of its minute structure and its development. Over a hundred and fifty pages at the end of the book are devoted to general embryology. A copious index of authors and matter complete the volume. The book is brought out in good style, well and clearly printed. The illustrations, which are numerous, are remarkable for their clearness and general lightness of character—so far, indeed, is this carried sometimes that they become quite sketchy; many of them are coloured, particularly the diagrams illustrating the minute structure of the various organs—such as the liver, lung, &c., some of which are particularly good. We were struck by the want of pictures showing the liver, pancreas, spleen, and other organs, as they really exist in the body—points which have been so well described and figured of late. Besides, we have wondered why certain illustrations find a place in the book, notably a picture of the lungs, with their vessels and bronchi, on page 532, in which we can see very little good anatomy. The descriptions are in general clear and full—indeed, they occasionally seem to err on the side of prolixity, if the book is to be considered what its title indicates—an elementary treatise on anatomy. The bibliography is very extensive; it is given at the end of each chapter. In addition, full credit is given to those authors whose views are set forth in the body of the descriptions.

On the whole we can say of this as we said of the first volume—it is a book well written, in an interesting style. Its perusal will well repay the trouble of reading.

4. Imitation, it is said, is the sincerest flattery; we doubt if it is more sincere than (or even so sincere as) translation. We cannot imagine any higher tribute paid to a text-book than translation into a foreign language by a foreign author for the use of his own students. Surely there can be no better proof of the excellence of a work than this. This high tribute we find paid to Professor Cunningham, and this proof of the excellence of his "Manual of Practical Anatomy," in the book under notice. In Continental medical schools, as a rule, the body is not dissected topographically, as in this country, but in separate systems—

muscles, nerves, &c., being done independently. The author, Dr. Kuborn, Anatomical Assistant in the University of Liége, in Belgium, having visited some of the English Schools in which the topographical method of dissection is pursued, determined to make an attempt to introduce this method into the University of Liége. With this object he sought for a suitable text-book, and selected the Manual of Professor Cunningham, with which we are so familiar in this country, for that purpose. Dr. Kuborn has translated and modified Professor Cunningham's work to suit the requirements of his own students. The chief modifications consist in a reduction of the anatomical descriptions, while the parts devoted to method, technique, and order of dissection, &c., are retained, as are the illustrations. The whole is condensed into one volume, closely printed, and not more bulky than one volume of the three in the original work. We need not criticise the matter of the book, it is so well known and appreciated in the original. We would merely congratulate Dr. Kuborn upon his judicious selection of a text-book, and upon the success and ability with which he has converted it.

Influenza: or Epidemic Catarrhal Fever. By E. SYMES THOMPSON, M.D., F.R.C.P.; Gresham Professor of Medicine, and Consulting Physician to the Hospital for Consumption and Diseases of the Chest, Brompton. London: Percival & Co. 1890. 8vo, Pp. 490.

THIS is a new and revised edition of a work written, at the request of the Council of the Sydenham Society many years ago, by Dr. Theophilus Thompson, F.R.C.P., F.R.S., and entitled "Annals of Influenza." That work was a laboriously compiled historical survey of the past epidemics of Influenza which had been observed in Great Britain from the year 1510 to the year 1847. In the present volume, Dr. E. Symes Thompson has not only revised his father's work, but has also earned a right to be regarded as the British chronicler or historian of the great outbreak of 1889–90, as Dr. Peacock was of the epidemic of 1847–48.

It will be readily understood from the foregoing that this book is not so much an original treatise as a compilation; nor does the author advance any claim to originality. Speaking of the recent epidemic, he says:—"It has been my aim to collect data and give

the detailed information on a similar plan to that adopted in the earlier part of the work."

To devote a book of well-nigh 500 pages to the history of a single malady may appear to be a waste of literary energy. But the justification is not far to seek in the surpassing interest aroused in the lay not less than in the medical mind by the extraordinary epidemic of last winter—a visitation which seems to have profoundly altered the "Epidemic Constitution" from that time even to the present date.

Dr. Thompson falls into a geographical error on the very first page of his book, for he uses the term "Great Britain" as synonymous with "Great Britain and Ireland." May we suggest that in a future edition he should adopt the expression "the British Isles," if he thinks "Great Britain and Ireland" too cumbrous a title. Perhaps we should not have noticed the mistake had he not done this Journal the honour of quoting from its pages in the first paragraph of his "Introduction." To the number for February, 1848, at page 256, Mr. (afterwards Sir William) Wilde, who then wielded the editorial pen of the *Dublin Quarterly Journal of Medicine*, contributed an article on "The Influenza," compiled from the records of the Dublin Medico-Philosophical Society and the "Molyneux Memoirs." Sir William Wilde states that when preparing the Report on the mortality of Ireland, published in the Census of 1841, he learned many curious facts connected with this disease and its epidemic outbreaks in early times in this country. It is described in a medical manuscript of the fifteenth century, under the name of *Fuacht* as well as *Slaodan*, and is mentioned in the Annals of the Four Masters as epidemic in Ireland in the fourteenth century. A disease, the symptoms of which answer to those of influenza, is also alluded to in the early Gaelic manuscripts under the term *Creatan*, probably from *Creat*, the chest.

The concluding portion of the work, as it left the hands of Dr. Theophilus Thompson, consists of Dr. William Farr's graphic Report on the "State of the Public Health in the Autumn Quarter of the year 1847" (October, November, and December). With the view of solving the vexed question of the Contagiousness of Influenza, we may well quote the opinion of that great master of Vital Statistics :—

"The English physicians of the 18th century," he wrote, "agreed in pronouncing influenza contagious. They did not mean that it was propagated by contact, but that it was introduced into cities, institutions,

and houses in England by persons actually affected by the disease. This notion is, however, too exclusive. The word 'contagion,' applied to influenza or cholera, is apt to mislead, and to have practically a bad effect. When people ask if a disease is contagious, they generally mean—'Are we more likely to have influenza or cholera if we touch or go near persons labouring under these diseases?' Now, if the matter of contagion is very diffusible, and is distributed equally through the room, the house, the street, the city in which a patient is lodged, no one living in the house, street, or city is much more likely to be infected if he approach the sufferer than if he remain in absolute solitude, shut up like the grocer of Wood-street in the Plague. The matters which excite influenza and cholera are evidently highly diffusible. In a few days influenza spread all over London. It met you everywhere. Nobody, therefore, has attempted to show that medical men, nurses, or others in attendance on the sick, suffered more than other people. If such should ever be the case, either in influenza or the cholera epidemics, it will be in rare circumstances, and should never deter the most timid from discharging their duties to the sick."—(Page 391.)

These views seem to us to breathe the spirit of true philosophy, and are alone capable of reconciling the contradictory opinions held, even at present, as to the contagiousness or otherwise of influenza.

Dr. Symes Thompson appears to blow hot and cold in relation to this question. At page 221 he observes that "some consider it (influenza) to be contagious only when it *degenerates into typhus.*" Surely, such an extraordinary doctrine might well have been consigned to a deserved oblivion. At pages 466 and 467 he sums up the evidence for and against contagion in the following sentences:—

"A careful review of the evidence and opinions of competent observers, however, authorises the belief that the disease *is* contagious, but it does not of course follow—nor does the author believe—that contagion is the only, or even the most frequent, method of communication. The assertion that the malady had been imported into this country by direct contagion from parcels, letters, &c., emanating from infected districts, is not borne out by facts; at any rate the history of the outbreak as it affected the Post Office and Foreign Office employees affords the idea no kind of support. The fact that the disease does not spread more rapidly now than of yore, in spite of the present rapid methods of transit, and the fact, too, that it does not necessarily spread along the main lines of travel, suffice to demonstrate the fallacy of the assumption of the disease being spread principally by contagion. Contagion, such as it is, seems to act more promptly on persons engaged in the open air, but there are so many

apparent exceptions to this rule that it would be imprudent to insist upon it."

The history of the epidemic of 1889–90 is well told by Dr. Symes Thompson, and occupies a little over seventy pages of the volume. The historians of the outbreak who are quoted are—Dr. H. P. Hawkins, of St. Thomas's Hospital; Sir Peter Eade, of Norwich; the Hon. Rollo Russell, who in a letter to the *Times* suggested the possible connection of floods in China in 1888 and 1889 with epidemic influenza; Dr. Bezley Thorne; Mr. W. Burr, who wrote on an almost coincident outbreak in the west of England and in Glasgow of equine influenza, which has received in America the name of "Pink-eye;" Professor W. T. Gairdner, of Glasgow; Dr. James Greig Soutar, of the Barnwood House Asylum at Gloucester; Dr. J. W. Moore, described by a strange mistake as "Registrar-General for Ireland;" Dr. William Tibbles, Medical Officer of Health for Nottingham; Dr. Gilbart Smith, of London; Mr. E. C. Barnes, of Hammersmith; Dr. H. C. Bristowe, who gives an account of an outbreak at King Edward's School for Girls; Dr. Thresh, Medical Officer of Health for the Chelmsford and Maldon rural sanitary districts; and Dr. Sheridan Delépine, of St. George's Hospital, London. Besides these writers, the opinions of Dr. Clouston, of the Morningside Royal Asylum, Edinburgh; Dr. Norman Kerr, and others, are often quoted.

Dr. Thompson is in error in stating that the epidemic "reached Dublin about the middle of January." Cases were already occurring a month earlier than that date, and its influence upon the registered death-rate was well marked in the week ending January 4, 1890.

The scope of Dr. Thompson's history of the recent outbreak may be gathered from an enumeration of the topics which he discusses—that is to say, nomenclature, differential diagnosis, symptomatology, relapse and recurrence, complications, varieties (after Dr. Norman Kerr), treatment, mortality (with reference to London chiefly, although it is not so stated), incidence, bacteriology, ætiology, meteorology, course of the epidemic, statistics of its spread and prevalence, its cost—probably £3.000,000; its presence in schools, and observations on its manner of spreading.

Such is the work under review. It would, perhaps, have been judicious on the author's part had he waited a few months longer before he wrote an account of the epidemic of 1889–90. Even up to the present day, the torrent of medical literature on the subject

continues in full flood both at home and abroad, and time might well have been allowed for theory to crystallise into knowledge ere the annals of influenza in 1889–90 were given to the world. One of the ablest and most scientific statements on the nature of influenza appeared in the *British Medical Journal* for April 12, 1890, from the pen of Dr. William Tibbles, Medical Officer of Health for Nottingham. It is quoted by Dr. Thompson at page 434 of his book, and we may well close this review with the conclusions contained in it:—

1. Influenza is a disease *per se*.
2. It is of miasmatic origin, the specific germ being an unknown bacillus (? micro-organism.—ED.).
3. It is severely infectious, and but mildly contagious.
4. It spreads by atmospheric influence, and by development in external media.
5. Its development outside the body is the cause of its being so rapidly and widely epidemic.
6. One attack is not protective against future attacks.
7. The cause of the origin of this world-wide epidemic is unknown. In a given district, the epidemic fails probably from want of numbers or from some change in the atmospheric conditions.

Notes on Typhoid Fever: Tropical Life and its Sequelæ. By JEFFERY E. MARSTON, M.D., C.B., &c.; Surgeon-General, Medical Staff (Retired). London: H. K. Lewis. 1890. Pp. 165.

IN these interesting "Notes" Dr. Marston records his experience on Typhoid Fever acquired in many regions of the world, and in treating many races of men; the last two chapters—on Tropical Life, and on Abscess of the Liver—were originally published in the *Lancet*.

Concerning the ætiology of Typhoid he appears to believe that the disease in different countries may be due to different causes—"one and the same phenomenon or set of phenomena need not invariably be the result of one and the same cause." "The altered conditions of life to which the young and recently-arrived soldier in India is exposed subject him to a great constitutional change—from the influence of climate, using the term in its widest significance as including altered habits of life, diet, and

notably increased climatic heat—coincident with which, and consequent upon it, the abdominal viscera, with their glandular and lymphatic systems, are in an exalted state of physiological activity; and that in many instances this physiological activity overstepped its limits and became pathological—in other words, that swelling and disease of Peyer's and the solitary glands took place, and that the clinical and pathological phenomena of enteric fever became developed and evolved out of this morbid condition." In other words, Dr. Marston believes Typhoid to be in some cases not a specific disease, but rather to be due to unhygienic conditions, without the intervention of any direct virus. While we are perfectly ready to admit that very little is known about the mode of origin and spread of typhoid, yet the peculiarity and constancy of the lesions which are found in this disease make, in our opinion, the view much more probably correct which assigns the disease in every case to the same specific cause.

Dr. Marston's observations have led him to believe that in some cases the incubation may be very prolonged; he cites cases (for the details of which we must refer to the original) in which 9 weeks, 70 days, and other long periods elapsed between infection and invasion.

The chapter on the symptoms and course of the disease consists not so much of a systematic account as of notes of what Dr. Marston has observed. Many of them are very interesting and well worth reading.

In many cases in India the attack seems to terminate critically, as it were, on or about the 21st day. In a few cases Dr. Marston has seen petechial or purpuric spots, together with vibices and bullæ on the extremities, in addition to and independent of the ordinary rose-coloured papules.

He believes the mortality in tropical climates to be higher than it is in temperate countries.

The remarks on Treatment are very judicious; for nourishment Dr. Marston trusts especially to milk, of which, he says, "between one and two pints in the 24 hours is sufficient in suitable cases." When it agrees, he gives up to two quarts daily. The patient is encouraged to take plain water or barley water. Soda water increases flatulence. He has been in the habit also of using raw hydrochloric acid beef juice. When iced it is occasionally useful in restraining nausea and vomiting. With regard to alcohol, "some cases do not require any throughout the attack, but the majority

are distinctly benefited by its administration during the later (not the earlier) stages of the disease and convalescence from it."

The following method is described for reducing temperature:—

"Have a light cradle made of wood and wire, of sufficient length and height just to cover the patient's body, to the various angles of which affix a number of tin vessels or gallipots filled with pieces of broken ice. Whenever the patient's temperature rises over 103° F. place this cradle over his body, throwing over it a sheet or blanket, and allow him to remain in this cool chamber until his temperature sinks a degree or two."

With regard to antipyrin and similar antipyretics "their employment may be, and occasionally is, necessary perhaps; but their use appears to me unphilosophical, occasionally dangerous, and they do not appear to exercise any real influence over the course of the fever, or to produce any effect adequate to the risk and the complication of the symptoms they are apt to induce."

In the last chapter on Typhoid, its causation in India and the means of limiting its ravages are discussed.

In the chapter on Tropical Life and its Sequelæ are found many interesting observations, especially on the subjects of anæmia and diarrhœa, which will be found useful to any medical man who has to treat invalids returned from hot climates. The last chapter treats of Hepatic Abscess.

We have been much interested in reading this work, and we can cordially recommend it. It is not in any respect a mere compilation from other works; it consists of original observations and conclusions derived from them, formed after an unusually extensive experience in almost every part of the British Empire.

Handbook to Dr. Koch's Treatment in Tubercular Disease. By E. F. Grün, M.R.C.S., L.R.C.P., and W. D. Severn, Assoc. Roy. Coll. Sci. London: J. & A. Churchill. 1890. Pp. 58.

Messrs. Grün and Severn, within 48 hours of their return from Berlin, compiled this "Handbook" from their notes; within 48 hours more it was printed and in the hands of the reviewer. This excessive haste is apparent on every page. Many of the statements are as yet wholly unjustifiable—*e.g.*, speaking of early cases of phthisis, "In this treatment, combined with therapeutic agents, we have *undoubtedly an absolute means of cure.*" There is nothing in these "Notes of a Visit to Berlin" (which would be a more suitable title) which has not been published in all the medical

journals. However, such is the excitement about Professor Koch at present, we expect this work will have a large sale for a few weeks. We feel confident that after that time it will sink into deserved oblivion.

MEDICAL DIARIES AND VISITING LISTS FOR 1891.

1. *Smith's Physicians' and Surgeons' Visiting List for* 1891. Forty-fifth year. London: Hazell, Watson, and Viney. No. 1A Edition.
2. *The A B C Medical Diary and Visiting List.* 1891. London: Charles Letts & Co.
3. *The Medical Bulletin Visiting List, or Physician's Call Record.* New Edition. Philadelphia and London: F. A. Davis. 1891.

1. It is not necessary to do more than notice the publication of the forty-fifth issue of this excellent Visiting List. The publishers are the successors of Messrs. John Smith & Co., whose names have been so long and honourably before the public as a firm of medical stationers.

In addition to the visiting list, the pocket-book before us contains a diary, almanac, and book of engagements for the coming year, besides the usual postal, general and special information for which it has become so famous.

The No. 1A Edition will be found the most generally useful for consultants.

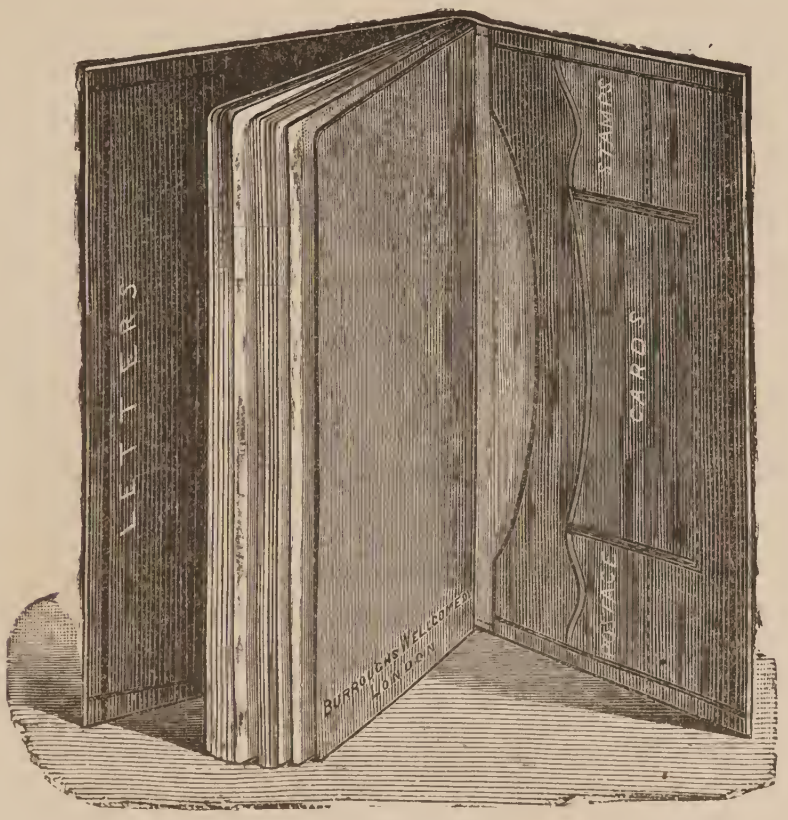
2. Messrs. Burroughs, Wellcome & Co., of Snow Hill Buildings, London, E.C., have recently published their 1891 edition of the "A B C Medical Diary and Visiting List," with which is combined the "A B C Modern Materia Medica."

The part devoted to the Medical Diary and Visiting List is of the orthodox pattern, and contains space for the entry of 50 patients' names. The firm also supply a double-sized diary, with space for 100 names. In addition to this there are the usual obstetric table and notes relating to fees in special cases.

The materia medica portion comprises the latest information with reference to new drugs of approved value, and notes respecting new uses which have been determined for remedies of an older date. This portion is printed on thin, tough paper, and altogether the size of the book is not larger than the usual Materia Medica

and Visiting List as used by the medical practitioner in general practice.

The book is covered in silk, and is made to fit into a handsome leather wallet, which may be used year after year, and is much more convenient than the usual tuck covering. The cost of this diary is, we believe, lower than that charged for the ordinary published diaries.



Through the courtesy of Messrs. Burroughs, Wellcome & Co., we are enabled to give an illustration of their very neat Diary.

3. The "Medical Bulletin Visiting List," published by Mr. F. A. Davis, of Philadelphia and London, is arranged upon a novel and original plan. The trouble of re-writing the week's list of patients week after week is avoided by having the "stubs" for each week of the month overlapped by the page containing the names. The "stubs" are perpetual, as they all run from "1" to "31." This is a time-saving arrangement, and the physician is spared the labour of re-writing the names of his patients every seven days.

Appended to the diary are the usual blank pages for special memoranda; addresses of patients, nurses, and friends; an obstetric record; a record of deaths, and one of vaccinations; bills and accounts, and a cash account.

De la Lobéline dans la Therapeutique de l'Asthma. Mémoire présenté au 1er Congrès Brésilien de Médecine et Chirurgie, et lu devant le même Congrès à la Séance du 15 Sept., 1888. Par le Dr. Silva Nunes. Rio de Janeiro: Typ. de G. Leuzinger & Filhos, Ou vidor 31. 1889.

This pamphlet is devoted to the advocacy of the use of the active principle of the lobelia inflata. The author, from an experience dating from February, 1886, declares that in lobelin we have all the therapeutic properties of lobelia without any of the disadvantages attending the use of the crude drug. He gives a number of formulæ in which, with extract of liquorice, pills are made, and others in which a solution of lobelin is added to syrup of currants.

Hypnotic Suggestion, with Notes of a few Cases treated by the Nancy Method. Read before the British Medical Association at Birmingham on the 31st July, 1890, by Geo. C. Kingsbury, M.A., M.D., Blackpool. Birmingham: E. J. Osborne & Son. 1890.

We are threatened with the infliction of an epidemic of literature on hypnotism—luckily the great mass of the papers on the subject quickly pass into oblivion and trouble readers no more. The present pamphlet is a reprint of a paper read at Birmingham, and it commences with an excellent though brief history of hypnotism, and there its excellence ends; for though the author strives hard to give good grounds for the use of hypnotism, he altogether fails to convince us of its advantages as an anæsthetic or analgesic.

I. *Flat Foot.* Clinical Lecture, Post-Graduate Course. Edinburgh, October, 1889. II. Paper read before Edinburgh Medico-Chirurgical Society, May, 1890, by A. G. Miller, F.R.C.S., Ed.; Lecturer on Clinical Surgery, and Surgeon to the Royal Infirmary, Edinburgh. (Reprinted from the *Edinburgh Medical Journal* for Nov., 1889, and September, 1890.) Edinburgh: Oliver and Boyd. 1890.

Both these papers are very short, but they contain a large amount of sound surgical information. In selecting "flat-foot" as the subject of his post-graduate lecture, the author did well—the disease is common and difficult to treat.

The main points emphasised by the author are—(1) the dia-

gnosis of pes planus; (2) the importance of the calcaneo-scaphoid ligament; (3) the *modus operandi* of the "wedge sole."

In issuing this reprint the author has conferred a distinct benefit on the profession.

The Bath Thermal Waters and Treatment. By T. PAGAN LOWE, M.R.C.S. Eng.; L.R.C.P. Edin.; Honorary Medical Officer to the Eastern Dispensary, Bath; formerly House Surgeon to the Royal United Hospital, Bath; House Physician and House Surgeon to the Royal Infirmary, Liverpool; and Ophthalmic Assistant to University College Hospital, London. With Historical Notes by HERBERT BENTLEY FREEMAN, M.A., English Chaplain at Algiers, and formerly Curate of Christ Church, Bath. Illustrated. London: Simpkin, Marshall, & Hamilton, Kent & Co. 1890. Pp. 50.

WE scarcely think that there was any pressing need for the production of this very slight account of Bath, its waters, and their therapeutical applications; but, to those who know absolutely nothing of these things, some information will doubtless be conveyed by these fifty widely-spaced pages. Eighteen of them are taken up by the Rev. Mr. Freeman's prefatory sketch—"A City of Memories"—which, Mr. Lowe tells us, is "sparkling;" and then we have a description of the baths, "short notes" on gout and other diseases for which Bath waters are found suitable, and a chapter on "Special Methods of Treatment employed either in conjunction with or apart from the use of the Thermal Waters." Four springs, rising within a few yards, supply the healing waters, at temperatures of 120°, 117°, 108°, and 104°—F., we presume. The composition of all four is the same, and will be found on page 30. It is stated that immersion for twenty minutes, at a temperature varying from 97° F. to 100° F., "causes a loss of weight (in a human body, we infer), from 3 ozs. to 10 ozs., increasing with the temperature, whilst during the packing process a further loss of from 6 ozs. to 10 ozs. takes place." It is said, also, that the use of the bath increased the average daily excretion of uric acid by 3·2 grs., and chlorine by 0·3 oz. to 0·36 oz., reducing urea from 1·013 oz. to 0·8 oz. Also, that drinking one pint of the water daily increased uric acid by 3·2 grs. in twenty-four hours, diminishing urea by 0·113 oz., and chlorides by 0·017 oz. (p. 31).

We do not presume to express an opinion on the "illustrations."

PART III.

SPECIAL REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.[a]

By Ringrose Atkins, M.A., M.D.; Resident Medical Superintendent, District Lunatic Asylum, Waterford.

I.—CLINICAL PSYCHIATRY.

The Insanity of Doubt.—In the *American Journal of Psychology* Dr. P. C. Knapp, of Harvard, writing on this subject, defines the insanity of doubt to be a "form of mental disturbance manifested in fixed ideas or imperative conceptions." Imperative conceptions in health are illustrated by the persistence of a tune or rhyme in consciousness after it has passed from the senses, and by the impulses people have to jump from high places, &c. The transition from these fleeting ideas to dominant persistent imperative conceptions is remarked. The dividing line is distinct, in that in the healthy person these ideas are not dominant. The clinical history has three stages:—1st. This period is ordinarily distinguished by the spontaneous, involuntary, and irresistible productions of some series of thoughts upon indeterminate, theoretical, and sometimes ridiculous subjects without any illusions or hallucinations. 2nd. The patient begins to reveal his distress to his friends, to give prolix recitals of his doubts, and to require constant reassurance. Mysophobia may appear in this stage, although it is not indicative of a more hopeless condition than that of a patient who simply questions. 3rd stage. The patient is a prey to continual agitation; he does not read or write, and passes the greater portion of his time in the midst of timorous irresolution and vague apprehensions, which keep him in a state of almost complete inertia.

This form of insanity, like all others, manifests itself in the

[a] The author of this Report, desirous that no contributions to the subject of Nervous and Mental Disease should remain unnoticed, will be glad to receive any publications which treat of it. If sent to the correspondents of the Journal they will be forwarded.

maladjustment of organic to environmental relations. The author calls attention to the fact that while in these cases the want of adjustment is perceived it is not realised, apprehended or comprehended; the victim must compare and recompare, and that, although he seeks adjustment, he is never sure of it. Insanity of doubt, according to the author, who agrees with Spitzka, is a curable disease, and when there is no decided neuropathic heredity its course is from three to six months. It is true it may run into paranoia, which it resembles in many respects. The difference is that in the insanity of doubt the imperative conception comes primarily from a normal conception that became persistent, and which is accompanied with incessant speculation. In paranoia the mental state is descended from a normal sensory error, through hallucinations perceived as such, to a primary delusion that requires or permits of no speculation whatever.

The Differential Diagnosis of Hypochondriacal Melancholia and the Hypochondriacal Stage of Paretic Dementia.—Dr. E. Régis, in the *Gazette Méd. de Paris*, Nos. 1 and 2, 1890, gives a summary of the points of difference between hypochondriacal melancholia and certain stages of paretic dementia, as stated by various authors who have written on the subject.

1. The hypochondriacal delirium of general paralysis has a special characteristic of absurdity, hebetude, and incoherence. It appears suddenly, and is mobile and inconsistent. The patients argue and speak as if hardly in earnest; they do not emphasise their complaint naturally (Baillarger, Marcé, Voisin, Luys, &c.). The delirium of melancholia may be monstrous, but it has not the same inconsistent absurdity. The patient believes in his disorder, reasons about it, explains it, and endeavours to convince, and becomes excited at contradiction (Luys).

2. In general paralysis the hypochondriacal delirium may be complicated with exalted ideas. This is never the case in melancholia (Marcé).

3. Hypochondriacal melancholia of general paralysis is not favourably influenced by morphia. The reverse is the rule in ordinary melancholia.

4. In general paralysis the patients are not hereditarily predisposed, nor have they had prior nervous disorders (Mendel).

5. General paralysis usually occurs between the ages of thirty-five and forty-five; its hypochondriacal melancholia follows the same rule (Mendel, J. Mickle).

6. Examination of the bodily organs is almost always negative in results (hypochondria *sine materiâ*, Mendel).

7. In general paralysis there are often from the beginning slight apoplectiform or epileptiform attacks, and spinal or pupillary symptoms (Mickle).

8. Later, the habitual signs of paralytic dementia make their appearance.

9. In melancholia of the anxious type the hypochondria is accompanied with ideas of damnation, analgesia, impulses to suicide and self-mutilation from fear of not being able to die. It terminates in delirium of negation, of enormity, and double consciousness (Cotard, Séglas).

These distinctive characters, taken from the literature of the subject, M. Régis says are far from being satisfactory or complete, and the most important of them, such as the peculiar character of the hypochondria and the heredity, are of slight value, as they may be met with in either form. Therefore he adds the following :—

1. Melancholia with hypochondriacal delusions is met with at an advanced stage from forty-five to sixty. It is more common among females than males, in the proportion of 11 to 8—the contrary to what occurs in general paralysis. On the other hand, it is, like every other kind of insanity, much less frequent in those who have suffered from syphilis than is general paralysis ; so that the existence of a prior syphilitic infection causes a strong presumption in favour of general paralysis.

2. The hypochondriacal type of melancholia does not appear at the beginning of the attack, but after a longer or shorter period, some months or some years. It is always consecutive to the ordinary phase of melancholia, especially the typical form—the delusions of culpability. It remains associated with this form and combines logically with it. It is tenacious, fixed, and persistent. It is rarely accompanied with hallucinations, but terrifying dreams, fear of dying, refusal of food, and tendency to suicide are almost the rule. The patient is subject to paroxysmal crises, more or less acute. For years the intelligence remains intact, the recollection good, and the mental clearness and power are retained to a greater or less degree, sometimes entirely.

3. Examination of the viscera is usually negative. Nevertheless we frequently meet with a saburral condition, stomachic and intestinal inertia, constipation, increased frequency of pulse, palpitations, and less frequently other functional disturbances. Emacia-

tion is progressive and rapid, sometimes amounting to a veritable cachexia.

4. Recovery is possible. Nevertheless the case may terminate in suicide, or marasmus, or may pass into the chronic stage. It is in this last condition especially that we meet with the "delire des négations" of Cotard, which appears to be the terminal stage of this form of melancholia.

The author sums up as follows:—"That the special type of hypochondriacal melancholia met with in general paralysis may also be met under the same forms in anxious melancholia. The diagnosis in these cases may present substantial difficulties. In order to solve the problem it is requisite to take into account all the clinical facts that may serve as distinctive." In order to facilitate this Dr. Régis has brought together the principal points of difference as given by the authorities, adding such as have been suggested by his own observations.—(*Am. Journ. of Insanity.*)

Motor Hallucinations.—Prof. Tamburini, in the *Revista Sperimentale di Freniatria,* records the following curious case:—A peasant girl (aged twenty-seven years) at fifteen, after a grave illness, had an attack of melancholy, in which she had an hallucination of hearing a voice—which said to her, "Lost for ever"—which lasted about four months. In March, 1888, after she had been married a short time, she had a return of melancholia; was apathetic and sleepless; she had also some dysmenorrhœa and leucorrhœa. She said that "words formed themselves in her mouth"—"Thou couldst eat a serpent," "Thou couldst swallow a live toad." When praying there would be maledictions against divinity and obscene expressions. Later she was obliged to repeat in a high voice the words which formed themselves continually in her mouth, which she must repeat in a rapid manner. She also had clonic spasms. There was a light rhythmical movement in the tongue and in its tip, accompanied by a sound which could be heard when the mouth was closed. Her lips were motionless. There were also clonic spasms in single groups of muscular fibres, especially those used in articulation. The psychical examination was imperfect, owing to the limited intelligence of the patient. The physical examination showed that the cranio-facial type tended to the cretinoid, forehead low, nose flat, intermittent asymmetry of the pupil, oscillatory movement of various muscles of the face, sensibility normal, and symmetrical for both sides of the body; organic functions normal.

The author, after reviewing the case and the literature of the subject, including the various theories, comes to the following conclusions:—

1. That, besides purely sensory hallucinations, it is interesting to distinguish motor hallucination, which displays itself more especially in the movements relating to speech, but may also show itself in any part of the body capable of movement.

2. That the seat of this last kind of hallucination ought to be located in the cerebral cortex.

3. That according to the degree of irritation of these same centres there would be simple hallucination of movement, or the transformation of this into an incontrovertible impulse, even to a relative convulsion.

4. That moreover, taking specially into account the physiological and clinical data, in which is admitted the mixed sensory motor nature of all the cortical centres, there is in every hallucination a part proportional to that belonging to each centre so much of the sensory image as is appropriate to the motor.—(*Am. Jour. of Nerv. and Ment. Dis.*)

Insanity after Acute Surgical or Medical Affections.—In the *University Medical Magazine*, December, 1889, Dr. H. C. Woods has an interesting paper treating of this condition, concerning which it is very important that correct ideas be disseminated among the rank and file of the profession, as cases of this kind usually come under the observation of the family doctor, who may fail to comprehend the situation. Though insanity following acute disease varies greatly in symptomatology, there is generally one common fundamental brain condition; and this fundamental brain condition bears no specific relation to the disease which has produced it, but may be the outcome of an altered nutrition, produced by exanthematous disease, diathetic disorder, traumatism, or by a surgical operation. There are ætiological and symptomatological reasons that insanities from these causes are identical in their nature.

Ætiological.—After disease the symptoms develop during convalescence, when the specific poison has exhausted itself. Fevers, traumatisms, surgical operations that are followed by insanity, have one influence in common—*i.e.*, they all tend to exhaust or impair the nutrition of the nerve centres. It is known that impairment of the nutrition by lack of food combined with anxiety is capable of causing symptoms similar to those which are present in insanities developed after disease.

Symptomatical.—Though the cases vary much in detail the general scope of symptoms and the general course of the disorder are identical:—1. There is always mental confusion—a mixture of excitement and mental power. 2. The cases nearly always end in complete recovery if free from organic disease.

Confusional Insanity—a term without pathological import, but expressing a necessary outcome of the pathological state—is probably as good a name as can be found for this condition. In chronic diseases accompanied by great bodily and mental exhaustion, consumption, gout, rheumatism, after shipwreck followed by exposure and starvation, the brain tissue gradually passes into a condition of perverted and exhausted nutrition similar to that of confusional insanity. This form of alienation follows typhoid fever not infrequently, and probably constitutes the bulk of cases named puerperal insanity. Within the last year the author has seen it follow ovariotomy, perineorraphy, and after the removal of the breast for cancer. It may be due to emotional strain accompanied by exhausting circumstances. The mental enfeeblement following exhausting disease is very slowly recovered from—two years elapsing before a student who had had typhoid fever regaining power of acquiring knowledge and doing high intellectual work. When confusional insanity is fully developed there is almost invariably a general lack of nerve tone, as shown by feeble circulation and coldness of the extremities, by general muscular relaxation and failure of digestive power. The tongue is often so heavily coated and the breath so foul that the inexperienced may think digestive disorder the basis of the attack. The temperature varies in different cases, from normal to low paroxysms of subnormal temperature. On the other hand, there may be distinct reaction, especially in puerperal cases. When fever exists at all, the temperature range is remarkable for its irregularity and extent, extreme pyrexia being often followed by a sudden and marked fall below the normal. Mental symptoms seem to be contradictory. Many are those commonly supposed to be the outcome of paralysis of cerebral function, while others are sometimes considered evidence of excited though perverted cerebral activity. Mental confusion is the most characteristic manifestation of the disease. This expresses itself by an inability to carry on a clear connected conversation and to recognise familiar persons and places. The weakened judgment cannot distinguish between the contending claims of subjective and objective sensations. Realities

and imagination are intermingled in hopeless confusion. Memory is pronouncedly affected and numerous vivid hallucinations affect all the senses. A peculiar hallucination, so often present that it may be considered characteristic, is that *another person or persons are in bed with the patient.* The delirium is commonly mild and non-aggressive. It may take on an active form, or the patient may be habitually quiet, but subject to paroxysms resembling those of acute mania. Any form of mania may be counterfeited. Commonly there is fear underlying the aggressiveness and violence resembling the fear of *delirium tremens.* When tremulousness exists the likeness is very pronounced. The author thinks *delirium tremens* may be considered a form or variety of confusional insanity. The kaleidoscopic character of the hallucinations, the stupor, the peculiar mental state, the lack of dominant emotional excitement, of good bodily nutrition, and of general nerve force, together with the previous history of exhausting disease, traumatism, or emotion, should make the diagnosis easy.

Treatment.—First, maintenance of bodily warmth by over-heated rooms, by hot-water bags, by the warmest covering whenever the bodily temperature is subnormal. Rest, massage, and exercise are hygienic measures that must be applied in every case. To increase the nutrition of the nerve centres and general tissues of the body, iron combined with bitter tonics in small or large quantities, strychnin given in small doses to the limit of physical tolerance, and phosphorus in small doses given continuously, are of great service. To obtain sleep or to quiet delirious excitement the bromides suggest themselves. These are powerful depressants to functional and nutritive activity of nerve cells, and great harm has often been done by their free use in confusional insanity. As a calmative the hot pack is serviceable, and very active delirium has been apparently much benefited by free blistering of the scalp.

II. NEURO-ANATOMY AND PHYSIOLOGY.

The Brain without Corpus Callosum.—G. Jelgersma (*Neurol. Centralblatt*, March 15th, 1890) expounds his theory about the appearances in the brain in which the corpus callosum has been found wanting. He observes that the new-born child with a brain one-third of the adult size has almost all the typical convolutions, and most of the secondary ones. The rest appear before the end of the second month. After this the brain grows as a whole. He thinks it probable that there is a constant relation between the

grey matter of the brain and that of the white matter, but where the corpus callosum is absent the white matter is diminished. The thinner the cortex the greater the winding of the convolutions. The space left by the want of the corpus callosum and the deficiency of the white substance is filled up by the extension of the lateral ventricles and the increased subdivision of the gyri. Deficiency of the corpus callosum is so rare that few have seen a single specimen of it, much less two; but Jelgersma finds, by studying the cases described, that increased number of the convolutions and irregularity in their character, with increased extent of the lateral ventricles, go together in every case save one in which the gyri were found increased, but the lateral ventricles were of normal extent. In those cases of idiocy in which there is failure of the corpus callosum he thinks that the grey matter is deficient in quantity. Jelgersma makes the morphology of the brain in such cases very much a case of packing. The cause of congenital deficiency of the corpus callosum is not known. It is generally combined with other abnormalities of the brain. Where it occurs alone the mental functions do not seem to be deficient.—(*Journ. Ment. Science.*)

A Modification of Weigert's Method of Staining Nervous Tissues.—G. Vassale (*Revista Sperimentale*, 1889, XV.) recommends the following modification of Weigert's method of colouring by hæmatoxylin where the objects are hardened in Müller's fluid, or in a potassium bichromate solution, and kept in alcohol. He uses three solutions:—

1. Hæmatoxylin, 1 grain in 1,000 grains of hot distilled water.
2. A saturated and filtered solution of cupric acetate.
3. Borax 2 gr., and potassium bichromate 2·5 gr. in 300 grs. of distilled water.

The sections are first placed in solution 1 for three to five minutes, then the same time in solution 2, and after a rapid cleaning are thrown into solution 3, where they lose their colour again. Then they are washed again, and the water removed by absolute alcohol, brightened up in a carbo-xylol solution (1 carbolic acid, 3 xylol), and then laid into xylol-Canada balsam. After the colour being taken out in solution 3, they may again be coloured in alum, carmine, or picrocarmine.—(*Am. Journ. Nerv. and Ment. Dis.*)

Hypertrophy of Muscular Fibres removed during life.—Oppenheim and Siemerling call attention to the fact which they think has not heretofore been noticed, that muscular fibres removed during life

are on the average from twice to three times as thick as those removed *post mortem*—a circumstance for which they are wholly unable to account. In the following number of the journal (*Centralblatt f. Nervenheilk*) in which their paper is published, they, however, give the rather obvious explanation suggested by Prof. Zuntz, that the difference is due to the contraction of the living muscle after excision. The fact is one which should be borne in mind by those engaged in such investigations—(*Am. Journ. of Insanity.*)

The Electrical Resistance of the Human Body.—The following are the conclusions arrived at by Drs. B. Silva and B. Pescarolo, from a series of observations published in the *Revista Sperimentale*, Vol. XV., Fasc. II., III., 1889 :—

1. The electrical resistance of the human body to the galvanic current, great in the beginning, descends at first rapidly, and then more slowly, to maintain, after a variable time in different individuals and in various diseases, a constant minimum for a given electro-motor force. The same facts are observed in the cadaver.

2. The electrical resistance of the human body diminishes with the augmentation of the electro-motor force and of the surface of the electrode, and *vice versâ*, and is scarcely influenced by the pressure and temperature of the electrode; a very little by the temperature of the body, increasing or diminishing with the temperature of it.

3. The interruption has no noteworthy influence on the electrical resistance. Commutation has a greater influence, especially when the surfaces of the two electrodes are very different, since the resistance diminishes at the anode.

4. The electrical resistance of the various parts of the body varies with the thickness of the epidermis, and is in relation with the number of sweat and sebaceous glands. Where these are in great numbers, and where the skin is thicker, the resistance is greater, and *vice versâ*. The manner of the behaviour of the resistance of the palm of the hand and of the plantar surface of the foot is different to that in other regions; there, in fact, the resistance is great and relatively constant.

5. In fevers, in the exanthemata proper, in correspondence with the greater eruption, in the obese, in the diabetic, in the convalescent from infectious disease, and in persons with a dry skin, the electrical resistance is great. On the contrary, it is less and it advances rapidly to the constant minimum in the active person

with a vigorous cutaneous circulation with much sweating; as also in Basedow's disease.

6. In hysteria the increase of resistance referred to by Vigouroux is not constant. Also, the difference of the resistance from the two halves of the body in hemiplegia and hemianæsthesia, organic as well as functional, does not always act equally. An influence of the endocranial pressure on electrical resistance cannot be admitted, and pleuritic effusions make no difference. However, in ascites the resistance of the walls of the abdomen diminishes after the development of the ascitic fluid.

7. With antipyretics, should the temperature be lowered or not, with sweating or no sweating, in the feverish as in the healthy, there occurs a diminution of electrical resistance. Bathing diminishes the electrical resistance of the feverish only when it diminishes the temperature; it has no evident influence on the healthy. Pilocarpin, whether it produces sweating or not, reduces the electrical tension of the body for the galvanic current. Pencilling with oil of mustard has also the same effect, as has also the application of a spray of chloroform, but in a less degree than the former. Venereal abuse, tobacco, emotion, fasting for twenty-four hours, the atmospheric state, abuse of alcohol, atropin, nitrite of amyl, faradisation of the skin, have no manifest effect upon the action of electrical resistance.

8. The particular method of behaviour of the resistance of the human body after the galvanic current depends upon the modification which it induces in the epidermis from its anatomical state, which also is influenced besides, as by external agents (traumatic causes, pressure, &c.), by the manner of action of the vasomotor system, and by the action of various remedies. Hence, it is not true that the measure of the electrical resistance serves to represent the state of the vasomotor system; neither has it importance in Basedow's disease, in hysteria, in endocranial affections, &c., being a phenomenon wholly physical, and depending only secondarily on the vasomotor system.

9. The better method of making an electrical diagnosis consists in using the table of Erb, with the theostat in the secondary circuit, the electrode, of equal surface (10 cm.), wet freely with water at 40° C., with the fixed electrode in the palm of the hand or on the sole of the foot, proceeding with the greatest rapidity possible. The best electrodes are made of brass or zinc, with a layer of mud on its surface, held in place by a piece of cloth or

leather. They should be applied with a moderate pressure—if possible always equal—on the skin during the electro diagnostic examination.—(*Am. Jour. Nerv. and Ment. Dis.*)

The Effects of Extirpation of the Cœliac Axis.—Dr. A. Lustig, of Turin, records, in the *Archiv. per le Scienze Med.*, 1889, the results which followed extirpation of the cœliac axis in dogs and rabbits. The peritoneum was opened and the plexus removed successfully in eleven dogs and two rabbits. The gastro-intestinal tract showed no disturbances. A few hours after the operation a transient glycosuria appeared, which, at the, most continued two days. An atrophy of the pancreas never appeared. In the first days—sometimes with, sometimes without, mellituria—*acetonuria* appeared. This often lasted until death, with continued decrease in the body weight and the temperature, and with slowing of the respiration. Death generally appears in a few weeks from coma acetonicum. In some of the animals the changes in the kidneys were those of acetonuria.

III. NEURO-PATHOLOGY AND PATHOLOGICAL ANATOMY.

Changes of Character in Man following Lesions of the Anterior Lobe.—Welt (*Deutsch. Archiv. f. kl. Med.*) has shown by cases under his own observation, as well as by those scattered about in medical literature, that marked changes of character or disposition occur very frequently after lesions of the anterior lobe of the cerebrum, with absence of all other cerebral symptoms, and that there is direct connection between the two. The changes vary greatly as to the time of appearance, nature, and duration. In all the observations, with the exception of one that remains doubtful, the surface of the frontal lobe was the part affected; in three cases the lesion involved the first and third convolutions; in three others the first alone was involved; and in two others the lesion extended from the first to the third convolution. There were *post-mortem* records in all eight cases, which showed that the portion which was uniformly involved was that part of the orbital convolutions lying nearest the median line; or, in other words, always the first frontal convolution. To localise more exactly, Welt says that it is the cortex of the first convolution, or that lying nearest to the median line of the orbital surface, and of the right rather than of the left frontal lobe. These observations are said to be entirely in accord with those of Goltz, Ferrier, and Lussana upon the lower animals. Dogs from whom the anterior

lobe has been removed show no motor or sensory disturbances, but the disposition frequently undergoes a complete change. They become irritable, pugnacious, and avoid association with other dogs. Uneasy and impatient, they run about without rest, and there is loss of intelligence. Ferrier found similar changes in monkeys, Lussana in dogs and pigeons.—(*Alienist and Neurologist.*)

Hereditary or Huntingdon's Chorea.—In my last Report (*Dubl. Journ. Med. Science*, April, 1890) mention was made of two additional cases of this rare disease recorded by Dr. Wharton Sinkler. It may be interesting to note here some further additions to its literature. Dr. G. Seppilli (*Revista Sperimentale*) gives a record of the cases known to him, and forms a clinical picture of the affection, which is essentially distinguished by its constant transmission by heredity, often through many generations, by its occurring generally between the thirtieth and fortieth years, by its gradually progressive functional disturbance of always new groups of muscles (even of the tongue), and by its incurability. The abnormal movements are aggravated by emotions, while they, contrary to the usual form of chorea, may be more or less completely suppressed by intended motions; during sleep they cease completely. Disturbances of sensibility are wanting; the mechanical and electric irritability is unchanged; the reflexes are normal, exceptionally heightened. Especially after the disease has continued for a lengthened period, slight psychic disturbances are frequently present, which may even increase to melancholia with inclination to suicide. This disease, dependent on a hereditary neuro-psychopathic basis, is not rarely accompanied by a general progressive dulness of the mind. The members of a family afflicted with this form of chorea who remain free are also frequently demented, or at least bizarre and "nervous." If one generation has been spared, then their posterity may be regarded as free from the heritage.—(*Am. Journ. Nerv. and Ment. Dis.*)

In the *University Medical Magazine*, June, 1890, Dr. C. M. Hay contributes an account of eight additional cases, and states the principal characteristics of the disease to be as follows:—

1. The disease is directly hereditary, and frequently runs through four or five successive generations.

2. Usually it begins in adult life between the ages of thirty and fifty years, but exceptions to this are frequent.

3. There is a very strong tendency to mental disease in some degree, and suicide is common in the affected families.

4. In the great majority of cases it begins insidiously in an upper extremity without any marked premonitory symptoms, but in some cases mental disturbance has preceded its onset.

5. The movements more or less rapidly become general and progressively more marked, some cases dying from the consequent disability especially of taking sufficient nourishment. Emotion increases the chorea, which is considerably under the control of the will. Speech and the power of writing are impaired early, and lost in the last stages of the disease. The knee-jerk is usually exaggerated and ankle clonus is present in some cases, while the condition of the heart has been noted in few of the cases. Epilepsy and phthisis are frequent in the affected families, and the former may co-exist with the disease.

Six of the eight cases which the author records have been examined by him personally, the other two are taken from the records of the Morris Plains Asylum.

Dr. Theodore Diller describes a case under his care in the *Am. Journ. of Med. Sci.*, Dec., 1889. The patient is a woman aged forty-seven, whose affection began six or eight years ago. The choreic movements gradually increased since the onset of the malady. Her normal disposition, which was amiable, became perverted, so that with the progress of the chorea she became peevish, irritable, and querulous, prone to sudden and violent fits of anger, despondent, and threatened violence to herself and others.

The patient has nine brothers and sisters, all of adult age, and four of whom are choreic. The father of these children, two paternal aunts, and two paternal uncles had the "shaking disease" for many years. The patient's grandfather was choreic, and one of her children was attacked with the disease at the age of eight. In all, twelve cases in this family were traced extending through four generations. The author also quotes two additional cases furnished him by Dr. G. H. Hill, of Independence, Iowa, and another by Dr. G. Adler Blumer, of Utica, N. Y.

The Pathological Anatomy of Chorea.—Dr. C. L. Dana reports, in the *New York Medical Journal*, the case of a male of eighteen years, who had had choreic movements for twelve years. Epileptic attacks of an hysteroid nature were subsequently developed, and finally the patient died of pneumonia. On autopsy there were found:—In the brain chronic leptomeningitis, non-adhesive, and therefore not severe; diffuse and varicose dilatation of the small arteries, especially of the deeper subcortical matter and capsule;

degenerative changes in the arterial walls, no arteritis; circumvascular lymph spaces greatly dilated; cortical cells in most regions normal. The severest changes—vascular, interstitial, and degenerative—were in the lower surface of the temporal lobes, in the internal capsule and adjacent parts of the corpus striatum, especially the lenticular nucleus and optic thalamus, the antero-internal part varicose nerve fibres; cell degeneration in some of the cranial nerve nuclei; slight connective tissue increase in the pyramidal tracts. In the spinal cord slight leptomeningitis, congestion of the cord, especially in the lateral columus; double central canal.—(*Alienist and Neurologist*).

Pathological Anatomy of Landry's (Acute Ascending) Paralysis.—Nauwerck and Barth report (*Deutsch. Med. Zeit.*) the following interesting case:—A girl, twenty years old, who had suffered for some time from pains in both legs, noticed that her legs began to be paralysed. This paralysis later attacked her body and arms. The paralysed muscles did not atrophy and never lost their normal electrical irritability. The reflexes in the lower part of the body were abolished. The sphincters, however, were unaffected. Just before death a slight improvement in the paralysed muscles was noticed, and the sudden death due to bulbar paralysis was quite unexpected. A microscopical examination of the brain and spinal cord was negative. The nerves of the cauda equina, however, showed evidences of a severe interstitial neuritis, and the sciatics, as well as the anterior and posterior roots of the spinal nerves, were similarly affected. The bulbar nerves and the nerves of the upper extremities were normal. Nauwerck and Barth conclude from this case that the peripheral nerves are the ones affected. Also, from the enlarged spleen, these authors found that it is an infectious disease.

Bacilli in Landry's Paralysis.—Dr. E. Centanni, of the Pathological Institute at Bologna, made an anatomical examination of a typical case of acute ascending paralysis, and found an acute interstitial neuritis, indirectly involving the spinal cord. A peculiar bacillus was found in large numbers in all the peripheral nerves when subjected to methylene blue borax, according to Sahli's method. The bacillus is cylindrical, rod-shaped, with round ends about 1·20 μ (micro-millimetres) in length, without spores, or tendency to any particular form of aggregation. It is mostly found in the endo-neural lymph spaces, surrounding the sheath of Schwann.—(*Alienist and Neurologist.*)

The Pathology of Friedreich's Disease (*Hereditary Ataxia*).— At the Session of the Société de Biologie, March 7th, 1890, M. Déjerine offered a communication on the pathological anatomy of Friedreich's disease. According to him, in this affection the neuroglia shows a network of very plainly visible fibres, which is not shown in the sclerosis of locomotor ataxy. Further, the vessels are only slightly inflamed, and the septa of the pia are not thickened. The contrary is the case in tabes. There is not, therefore, in the affected column any true inflammatory sclerosis, but a sclerosis resulting from an anomaly of development—a veritable gliosis which resembles that described by M. Chaslin in the brains of epileptics. We see, therefore, that according to pathological anatomy Friedreich's disease is an arrest of development, a malformation which explains how it can be hereditary and how it is accompanied with other deformities—in the heart, for example.—(*American Journal of Insanity.*)

Aphasia and General Paresis.—Rosenthal, of Warsaw (*Centralblatt f. Nervenheilk.*) reports three cases of aphasia. The first patient, a general paretic, was unable, when received, to express himself intelligibly, although he understood what was said to him, and could repeat words spoken to him without difficulty. The right side showed more impairment of motion than the left. Subsequently, there was an epileptiform attack, which left total right hemiplegia and complete aphasia, continuing until death, nine months later. At the autopsy there were found atrophy of the frontal lobe, with softening of the posterior half of the orbital portion of the second frontal convolution of the tip of the left temporal lobe, and of a large portion of the left island of Reil. The aphasia was attributed to the last-mentioned lesion.

The second patient, also a general paralytic, suffered at the time of his admission from aphasia, with complete word-deafness, which had come on in consequence of an apoplectic attack a year previously. There had been transient right hemiplegia. He only uttered a few unintelligible sounds, and understood nothing of what was said to him, and expressed himself by gestures. Death occurred from œdema of the lungs, following general convulsions. At the *post mortem* there were found thickening of the pia mater, especially over the frontal lobes and anterior central convolutions, which were atrophied. Several small hæmorrhages, from the size of a pin's head to that of a pea, in the left hemisphere, and a remarkable atrophy of the first left temporal convolution, which

measured only four ctm. in length and a half ctm. in breadth, while the corresponding right convolution was seven ctm. long and from two to three wide. The hæmorrhages were apparently recent, and the aphasia and word-deafness are attributed to the lesion of the temporal lobe.

In the third case the patient's illness was attributed to a severe blow on the head, which was followed later by an apoplectic seizure, leaving behind it right hemiplegia and aphasia. When received under treatment there was paralysis, with contracture of the right extremities, general muscular weakness, speechlessness, and apparent inability to understand what was said. The patient died from pneumonia. The whole left hemisphere was found reduced in size—at least a third smaller than the right. This atrophy was especially marked in the frontal and temporal regions, and there was yellow softening of the posterior half of the first left temporal convolution.

Lesions of the Spinal Cord.—The *Lancet* of March 8th, 1890, commenting on Dr. Charlton Bastian's paper on "Symptoms of Lesions of the Spinal Cord," which was read before the Royal Medical and Chirurgical Society, February 22nd, says that a modification of current views as to the symptoms of complete transverse lesions of the spinal cord will be necessary after the masterly and convincing paper by Dr. Bastian, who holds that in *complete* lesions of the spinal cord there is *absence* of the knee-jerk and other deep reflexes, and not increased reflexes, as usually taught; also, that there is muscular flaccidity, not rigidity.

In support of these views Dr. Bastian cited carefully-detailed records of four cases in which there was developed under observation complete transverse lesion of the spinal cord (due to extensive softenings). Dr. Bastian holds that the reason that exaggerated reflexes are reported in these cases is because the transverse destruction of the cord is not complete. Mr. Boulby and Dr. Hughlings Jackson concurred in Dr. Bastian's opinion.

Calcification of Brain Membranes.—Dr. Osler has presented to the Philadelphia Pathological Society a specimen of the calcification of the dura mater from an elderly woman. The dura was not specially adherent, but a large portion covering the left hemisphere was a uniform plate of calcified tissue. On the right side there were irregular areas of lime deposits. The same condition existed on each side of the longitudinal sinus. There was general senile atrophy of the viscera, but no great deposit of lime

salts in the blood-vessels. Dr. Sueve has reported a case of calcified falx cerebri in the *Med. News* of March 23, 1889. Dr. W. R. Jackson reports another more interesting in the *Med. News* of April 13, 1889. The case was that of a negro, aged forty, who died of syphilitic disease of the pia mater. The anterior two-thirds of the falx were calcified, the plate resembling a scythe blade about four inches long, one inch wide, and varying from one-fourth to one-half inch in thickness. Death was supposed to be due to the calcified falx.—(*Alienist and Neurologist*).

(*To be continued.*)

INDUCTION OF PREMATURE LABOUR.

Ahlfeld gives the results of 118 cases of premature labour occurring between the years 1871 and 1890. Contraction of the pelvis was the indication for 111 of the 118 cases. The *conjugata vera* averaged 3·14 inches; in ten of the cases it was under 2·75 inches. Altogether 121 children were born. Born alive, 102; born dead, 19; died during first day, 18; died before twelfth day, 9. Where the *conjugata vera* was under $2\frac{3}{4}$ inches, 10 children, none lived; over $2\frac{3}{4}$ inches to 3·35 inches, 57 children, 38 lived; from 3·35 inches to 3·84 inches, 25 children, 21 lived. Sixty-two per cent. of the children were discharged from hospital with their mothers. Only *one* mother died from the direct effects of the operation; in her case death was attributable to bruising of the parts, from the passage of a large head through a deformed pelvis.—Dr. J. C. Cameron, *Montreal Medical Journal*, Sept., 1890.

NERVOUS TROUBLES FOLLOWING ORGANIC STRICTURE.

Dr. Hunter M'Guire (*Virginia Medical Monthly*) reports a number of cases in which nervous troubles, some of them of a very serious character, disappeared on the removal of an organic stricture from the urethra. He, however, writes:—"Urethral strictures are so common, and disorders and diseases of the nervous centres so frequent, after middle life, and the interval of years between the formation of the stricture and the appearance of nervous trouble so great, that it is difficult to say, with certainty, that one is dependent on the other."

NOCTURNAL INCONTINENCE.

M. Van Tienhoren, believing that nocturnal incontinence in children results, in the greater number of cases, from insufficiency of the sphincter of the bladder allowing some urine to trickle into the urethra and thus excite contraction of the viscus, places the patient's buttocks on a pillow. He has by this simple method attained excellent results.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Samuel Gordon, M.D., F.R.C.P.I.
General Secretary—W. Thomson, M.D.

SECTION OF MEDICINE.

President—J. Magee Finny, M.D.; President of the Royal College of Physicians of Ireland.
Sectional Secretary—A. N. Montgomery, M.R.C.P.I.

Friday, November 21, 1890.

The President in the Chair.

Multiple Neuritis.

The President read a paper on the above subject. [It will be found at page 1.]

Dr. S. T. Gordon said the lady whose case the President had described, and who had been a patient of his, was now almost perfectly recovered. He had been visiting her a considerable time before he elicited that she was addicted to taking large quantities of alcohol. On examination she exhibited the typical drop-wrist, while her feet could not bear any weight, and she was also subject to delusions—for instance, she would repeat imaginary conversations. She had pains first in both tibiæ, then in her feet, particularly in the great toes, and then in the wrists and hands, while for some time she involuntarily passed urine. Under treatment the pains left her in the same order, but having again got some alcohol surreptitiously the pains returned, attacking her feet across the toes. Nine months had elapsed since the President saw her, and in the interval she had been for some time at Buxton, and had given up alcohol. Her mind was now quite clear, and though she still complained of pains, she went to a dance recently, and speaking from his knowledge of her for a number of years, he had never known her in so good health, mentally and physically, as she enjoyed at present.

Acromegaly.

Dr. Joseph Redmond read the notes and exhibited photograph casts, &c., of a case of acromegaly. M. H., a young girl, aged nineteen, was admitted into the Mater Misericordiæ Hospital on the 25th of July, 1890, complaining of great weakness and swelling of the hands, feet, and knees. Her present illness commenced in December, 1889, during the epidemic of influenza. The patient is not quite certain whether she suffered from this disease or not. The first thing that attracted her attention was the condition of her hands and feet, which were swollen, sore, and tender to the touch. Her hands were large, fingers thickened and bulbous, and nails slightly convex. There was a marked increase in the size of the carpal ends of both radius and ulna.

The backs of the hands were considerably swollen, but did not pit on pressure. Her knees were enlarged. Below the knees the legs were uniformly enlarged. The ankles were widened and some effusion was present in the joint. The feet were large and thicker than normal; the toes thickened and ends bulbous. There was œdema of the dorsum of the foot. Urine normal. Thyroid gland appeared to be absent, and no evidence of persistence of the thymus gland could be obtained. During her stay in hospital she suffered occasionally from diarrhœa and pain in the back. Her pulse, temperature, and respiration usually averaged—pulse, 100; temp., 101·6°; respir., 24. There was no marked alteration in the condition of her hands.

Dr. M. A. Boyd said he had himself seen and recognised the case in the first instance as presenting clinically the physical signs described by Dr. Saundby in the *Illustrated Medical News*. The house physician had called his attention to the case as presenting anomalous symptoms.

The Section adjourned.

SECTION OF OBSTETRICS.

President—S. R. Mason, M.B., F.R.C.S.I.
Sectional Secretary—Andrew J. Horne, F.R.C.P.I.

Friday, November 28, 1890.

The President in the Chair.

Exhibitions.

Dr. Cranny exhibited an ovarian cystic tumour. He removed it from a woman sixty-one years of age. She made an uninterruptedly good recovery. She had borne seven children, and had ceased to menstruate some nine or ten years ago.

Dr. Macan exhibited a uterus removed, per vaginam, for cancer of the cervix. The woman came to him in February last. She had worn a pessary for a length of time, and the whole of her vagina was then in a granular condition. She was an enormously large woman. She said she had had hæmorrhages in her confinements. With great difficulty he applied a speculum to the examination of the diseased part. He treated her with chloride of zinc and water in equal parts, and after a while the anterior wall of the vagina got perfectly smooth. After having attended her for about two months he made up his mind that she had not cancer. Afterwards she came back to him and he scraped off something from the anterior wall of the vagina and sent it to Dr. Purser, who pronounced it to be carcinoma. Afterwards he put her under ether, cut a piece out of the cervix and sent it to Dr. Purser, who said it was cancer. Consequently he extirpated the cervix. He was led to his first diagnosis by the cicatrisation having got better under the treatment with chloride of zinc. He performed the operation on last Sunday three weeks. He found a number of Nabothian follicles in the cervix. The bladder was involved, and he had great difficulty in keeping clear of it. There was great destruction of the posterior wall of the uterus, but there was no indication of sarcomatous degeneration of the mucous membrane. The woman was thirty-six years of age.

Mr. Tobin exhibited a multilocular ovarian cyst which he removed from a woman in St. Vincent s Hospital on Wednesday, Nov. 26. She had an easy confinement of her first child last July, and about seven weeks afterwards she noticed a painful tumour in the right iliac fossa. It grew rapidly, and in three months had attained a great size. There were no adhesions, and the removal of the tumour was comparatively easy. The case had since progressed without any disturbance.

Dr. William Smyly exhibited three myomata removed by supra-vaginal hysterectomy. The first of these cases came under his care in the Rotunda Hospital last May. The woman had a large bleeding myoma, and the removal of the appendages was not found to lead to any good result. He operated on the 26th of May, and had to remove the greater part of the uterus. He treated the pedicle extra-peritoneally, and the patient made a good recovery. The second case came under his care in the early spring of the present year. The woman was reduced to a very low state from hæmorrhages, and was exceedingly anæmic. He postponed operating and stopped the hæmorrhages by plugging, and in that way improved her health and strength. On the 13th of June, considering that she had recovered strength sufficient to bear an operation, he removed the uterus, and she had made a good recovery. In the third case he performed the operation about six weeks or two months ago. The indications for an operation were not so clear as in the other two cases, for she had no severe hæmorrhages ; and when she first came

to him he advised her against an operation and sent her home. She came to him shortly afterwards saying that she could not endure the tumour, as it prevented her from doing her work. He performed the operation in the same manner as in the other cases, and the woman had made a good recovery.

Dr. Macan exhibited a uterus with fibroid tumour removed by laparotomy. The woman came to the hospital very anæmic, having suffered from profuse hæmorrhages; and it was not until after an improvement had taken place in her condition that he performed the operation. The abdominal wall was some three inches thick, and the pedicle was three inches lower than usual. This added to the difficulty of the operation. He desired to say a few words as to the removal of fibromata. No doubt the ideal operation was to remove the fibroma, leaving the uterus and ovaries. The next form of operation was to remove the fibroma, return whatever stump was left behind, either with or without the ovaries, and sew up the incision. It was more difficult to sew up and return the stump of a fibrous tumour than to put it into the abdominal walls. The question as to the way the stitching was to be performed was a matter of experience, and the dangers of sepsis were always to be guarded against. He granted that the extra-peritoneal operations had been found very successful as regarded their immediate results, but they did not hear how the patients were after two or three years. The weak point left in the abdominal wall by this form of operation was a great source of danger where the woman had to undergo any labour that put the wall into action. The revolt which had taken place against Porro's operation was to be traced to this source. Originally the practice was to treat the pedicle of an ovarian tumour extra-peritoneally, and there was no reason why a progress from extra- to intra-peritoneal treatment should not go on in the case of fibrous tumours as it had done in the treatment of the pedicles of ovarian tumours. He hoped that in the future it would become as uncommon to treat the pedicle of a fibrous tumour extra-peritoneally as it was now to put the pedicle of an ovarian tumour into the abdominal wall. As regarded sewing up, the difficulty was to sew the surfaces accurately together. Schroeder made the greatest difference between the cases in which the cavity of the uterus was and was not opened, because in the former the danger of infection was very great, whilst in the latter there was no danger of infection from the interior of the uterus. He believed, however, that with the aid of antiseptics it was possible to sew up the interior of the uterus sufficiently to prevent infection from the surface; whilst as regarded the uterus itself, its interior was normally antiseptic. In the present case the results had been perfectly satisfactory. The woman, no doubt, had a temperature of 101°, and she also got a bad attack of bronchitis; but no other trouble occurred. There was no sloughing of the abdominal wall;

the woman was able to walk about in three weeks after the operation; she had her two ovaries, and possibly might again have menstrual discharges.

Notes on the Operative Treatment of Uterine Cancer.

The PRESIDENT read a paper on the above subject. Having alluded to the negative treatment pursued some years ago and then to the treatment by Chian turpentine, he proceeded to describe the various operative procedures practised in the present day, as well as the cases suitable for each. He expressed an opinion adverse to Marion Sims' operation on account of the difficulty of judging the amount of sloughing action which would take place, and strongly approved the removal of the entire or portion of the uterus for cancer of that organ. Two cases of operation for the removal of the vaginal and supra-vaginal portions of the cervix were described; both terminated most favourably, the first, having been operated on nearly three years ago, remains in perfect health.

The removal of the entire uterus by Freunds' and the vaginal operation were described, and a case of the latter operation was noted where catch-forceps were largely employed to secure the vessels in the broad ligament. The relative merits of the operations were then compared, and in suitable cases where the cancerous disease can be removed by it the supra-vaginal method was recommended as being the best.

DR. ALFRED SMITH said it seemed to him that the question as to how and when a case should be operated on was always one of diagnosis. During his time in the Rotunda Hospital he had several cases of carcinoma; and in view of the desirability of operating he had divided them into certain and doubtful cases of carcinoma. The first class consisted of the cases in which there were both clinical and microscopic indications of carcinoma. The second class he found it necessary to subdivide into two others—one being a class in which there were clinical symptoms of carcinoma, whilst the microscope failed to indicate it; and the other being one in which the clinical symptoms were perfectly benign, but typical cancerous conditions were shown by the microscope. As regarded the first principal class of cases of the cancerous conditions where extensive operative interference was not possible, palliation only could be resorted to. In cases where the carcinoma was limited in extent, whether confined to the cervix or not, a point on which he desired information was as to whether there should be complete removal of the uterus or not. Statistics showed that in the majority of cases of cancer of the cervix there co-existed a very curious condition of the mucous membrane known as sarcomatous degeneration. It was therefore recommended that in every case there should be complete removal of the uterus.

DR. BAGOT stated that there were a few points regarding the operation treatment of carcinoma to which he would like to draw their attention.

First as to the simple amputation of the portio vaginalis. No one would now dream of doing it as a radical operation even for an apparently very limited carcinoma of the vaginal portion. As to the supra-vaginal amputation or high operation of Schroeder, Dr. Mason had spoken of it as being the proper procedure in cases where the carcinoma was limited, or rather, he should say, apparently limited to the cervix, and stated, as one of his reasons, that this operation was so much easier and less dangerous than vaginal hysterectomy. Now, as far as Dr. Bagot knew, the latest statistics both with reference to the immediate mortality after the operation, and regarding the period of immunity before the return of the disease, did not quite justify this statement.

The latest statistics which Dr. Bagot had seen were those given by Dr. Pozzi in his "Traité de Gynécologie," 1890, where it was stated that the operation of supra-vaginal amputation was followed by a mortality of not less than 11 per 100 in the hands of good operators both in France and other countries, while the mortality after vaginal extirpation in France was, according to the same writer, about 5·88 per cent. Leopold, in Dresden, had performed 80 vaginal hysterectomies with a mortality of 5 per cent., not losing a single patient out of the last 52 cases of this series. Imitri de Ott had performed 30 vaginal extirpations without a death. The reason that supra-vaginal amputation was preferred in cases where the disease appeared to be limited to the cervix by some operators, of whom John Williams was foremost in England, was because the various forms of cervical carcinoma usually tended to spread outwards towards the vagina and parametrium, &c., rather than upwards towards the body of the uterus. This was true in the majority of cases; but he maintained that it was impossible to determine with certainty either before or during the operation to what height the disease had spread. Cases had been published by various observers proving this. Pozzi, for instance, had performed a vaginal extirpation for an epithelioma, apparently limited to the cervix; but after the operation it could be seen that a narrow strip of carcinomatous growth had extended up along the mucous membrane to the fundus. Cases of a rarer form of extension of the carcinoma had been published by Ruge, Duvelius, Abel, &c., where they found isolated nodules of carcinoma in the body of the uterus, due to metastasis starting from a small epithelioma of the cervix.

In addition to these facts there was the point brought so powerfully to bear on the point by my former colleague, Dr. Alfred Smith—namely, the results of Abel and Landau's researches on the alterations, met with in the mucous membrane of the body, coincident with epithelioma of the cervix.

Now as to Freund's operation, Dr. Bagot thought that Dr. Mason had hardly brought clearly before the meeting the necessary indications for the performance of this operation. For no one would think of performing

this, an operation followed by a mortality of over 67 per cent., if he could have recourse to a vaginal hysterectomy.

This operation was, as far as he could judge, to be performed only when the uterus was too large to be extirpated per vaginam, or when there was great fixation due to old perimetritic adhesions, so that the uterus consequently could not be drawn down. Under such circumstances one had to choose between Freund's abdominal and Martin's abdomino-vaginal, or mixed method of operation, or else to have recourse to removal of the uterus by means of the parasacral incision of Wölfler or the sacral incision, as in Kraske's operation for extirpation of the rectum. From what Dr. Bagot had read about it he would, under these circumstances, prefer extirpation by means of Kraske's method or some modification of it.

With regard to the degree of fixation, it was often very difficult to determine whether this was due to a carcinomatous infiltration of the ligaments or to a parametritis, for as the carcinoma spreads it was always preceded by a zone of inflammatory infiltration.

One should, therefore, make a most careful examination under narcosis of the broad and utero-sacral ligaments both per rectum and per vaginam. As an example, he might mention the following case:—A woman had been sent into the Rotunda, suffering from an epithelioma of the cervix. On first examination, it seemed a suitable case for total extirpation; but at a subsequent examination under ether, one could feel that the utero-sacral ligaments had been attacked by a nodular infiltration, like beads in a necklace, and some enlarged lymphatic glands could be made out. There was a point which occurred to his mind as to whether an operation was justifiable in such a case as the one he had just alluded to—namely, that if surgeons considered it justifiable to remove a breast, when the axillary glands were enlarged and had to be enucleated, he did not see why such a case should be abandoned, for now the pararectal, the parasacral, and the preliminary extirpation of the sacrum by Kraske's method had opened up a new way by which the parametrium and surrounding structures could be more easily extirpated along with the uterus. Lastly, there was a point of the greatest importance—he meant the early diagnosis of carcinoma. He thought that in all cases where there was the slightest suspicion a portion of the growth should be submitted to a competent pathologist.

The Chairman remarked that in the first of the President's cases the woman was stated to have been only twenty-three years of age, and to have had no children. He had not heard it stated that a microscopic examination was made, and therefore he felt at liberty to entertain a doubt that she had carcinoma. He had looked over authorities as regarded cases of total extirpation in which the disease had been only supposed to affect the vaginal portion of the cervix, and had found that Leopold, in 78 cases of carcinoma, removed the whole uterus in 57 of them in which

the cervical portion was involved. Dr. Smith had said that in a large number of cases the first stage was a sarcomatous degeneration of the mucous membrane. He had at present a case in which he had scraped out the uterus carefully and got no indications of cancer; nevertheless the woman was bleeding and losing flesh, and he believed he would have to deal with the case on the clinical symptoms alone. He was surprised to hear that the President considered supra-vaginal amputation to have afforded better permanent results than total removal; but judging by the reports of Leopold's cases, and those of others that he had been looking over, he hardly thought that they would have resorted, in 200 or 300 instances, to total extirpation of the uterus if they thought they could have got as good results from the supra-vaginal operation, which was an easier one to perform. He considered it to be practically almost settled that unless the diagnosis of carcinoma of the mucous membrane was excluded by positive observation of matter scraped out from the uterus, their duty, in cases of carcinoma of the cervical portion, was to extirpate the whole uterus. A more difficult question to answer was, what extent of fixation counter-indicated operative interference? Slight fixation did not. Dr. Bagot said the posterior ligaments were those which gave the greatest indication of how far the cancer had gone. Hofmeier, who had written on the operative treatment of cancer, considered that infiltration of the broad ligament might go a great deal further without indicating carcinoma. If the ureters could be guarded, by the introduction of catheters, the carcinomatous portions of the uterus could be extirpated. Such precautions would be essential in any resection of the posterior wall of the bladder, and if adopted the bladder could be cut with safety; but anyone who could not sew up the bladder should not attempt the operation. He concurred that the gynæcologist ought, if possible, to be his own pathologist, and he ought to be a good microscopist.

The PRESIDENT, in reply, said there could be no comparison of results between the mortalities that occurred in the cases of particular operations and the general mortality. If they took all together they found that the mortality from the supra-vaginal operation was less than that from the total removal of the uterus. Both of the cases that he brought forward were examined microscopically, and it was pronounced that there was carcinoma in each. Dr. O'Carroll, who examined the first, said there was carcinoma starting in some of the glands of the cervix.

Complete or Annular Prolapse of the Urethral Mucous Membrane.

DR. BAGOT read a paper on the condition described as annular or complete prolapse of the urethral mucous membrane. He stated that in most of the British text-books this subject had been only lightly touched

upon or altogether omitted. In describing the conditions and the symptoms to which it gave rise, he alluded to the contributions to the literature of the subject by M'Clintock, Tavignot, Patron, Winkel, Ruge, Hofmeier, Benicke, Pozzi, Södermark, and Skene, &c. Since Dr. Bagot's appointment as Assistant Physician to the Rotunda Hospital three cases of the disease had come under his notice.

The first, a woman aged thirty-three years, complained of a swelling at the orifice of the vulva, from which there was a discharge. She suffered from intense pain on trying to pass water. A dark-red tumour, the size of a walnut, projected from the vestibule. The central and most prominent part was sloughing, and in the middle of the sloughing mass the meatus urinarius was found. The tumour sloughed off and a spontaneous cure resulted.

The second case was a child, aged five years, who suffered from pain during micturition, and for some weeks her underlinen had been constantly stained with a sanguino-purulent discharge. A tumour of a bright-red colour, about the size of a large cherry, projected from the vestibule and filled the vulvar orifice. The external meatus of the urethra, dilated and funnel-shaped, was situated on the central part of the tumour. It bled easily on being touched. He removed this tumour with a scalpel, and stitched the urethral to the external mucous membrane by a few interrupted fine silk sutures. Dr. Earl had made microscopical examinations of the tumour; part showed the characters of a fibro-myoma, and part consisted of prolapsed and hypertrophied mucous membrane. A perfect recovery resulted.

The third case was a child, aged seven years, who had suffered from hæmaturia. A dark-red, or purple tumour, about the size of a cherry, projected from the vestibule; this was removed as in Case No. 2. The child made a perfect recovery. The tumour was found, on microscopical examination, to be of angiomatous structure. In none of the patients was there a history of any affection of the urinary organs, nor was there at the time when they came under his notice any constitutional trouble. All seemed to enjoy fairly robust health. The disease appeared to be quite local, for with the removal of the growth all the symptoms had disappeared. In the third case pain had not been complained of, nor had it been a very marked symptom in either of the other two cases till the tumour began to be inflamed. The results of the microscopical examination in the last two cases—this had unfortunately been omitted in the first—would tend to confirm the opinion that the cases described as "complete prolapse of the urethral mucous membrane" were rarely, if ever, instances of true primary prolapse of this membrane; but that this condition was secondary to some neoplastic change in it, the most usual being, according to the investigations of Ruge and Martin, the presence of an angioma.

Dr. Kidd remarked that during the time he was Assistant Master of the Coombe Hospital he saw a case of an old woman, of about sixty years of age, who had three prolapses—one of the rectum, one of the uterus, and an annular prolapse of the mucous membrane of the urethra.

Dr. Macan said he saw the case in which Dr. Bagot mentioned that the sloughing had taken place, and he did not recognise it as a case of prolapse.

Dr. Bagot, in reply, said there was no authenticated case of prolapse of the bladder.

Myoma Uteri.

Dr. William Smyly exhibited appendages removed from a case of myoma uteri. The tumour was about the size of his two fists. He determined to remove the tumour itself. He was prepared for a very difficult operation, as the tumour was well down in the pelvis; but on opening the abdomen he found that, in addition to the large myoma, there were a number of small nodules, so that he had to confine the operation to the removal of the ovaries. The operation was an easy one, and the patient had made a good recovery from it, but time alone would tell whether she would be cured of the menorrhagia or not.

Retained Fœtus.

Dr. Macan exhibited a fœtus which had been retained for three months after the normal termination of pregnancy. He believed it to have been a case of postponed labour. Four years previously she had had a similar experience, and carried a fœtus for eleven months. He cross-examined her carefully as to the case now submitted, but got no history of labour having come on at the end of the ninth month and gone off again. She said she had no pains until the morning on which she was delivered. She had been in good health; but about the present retention she consulted Dr. O'Brien, of Tipperary, who was acquainted with her previous history. In her former delivery her vagina was a good deal torn and became enlarged afterwards. Dr. O'Brien recognised that the child had been dead for three months and that the vagina was closed, and therefore thought that ordinary delivery would be more dangerous than that by abdominal section, and thought that Porro's operation should be resorted to in order to remove the child and to prevent the accident from occurring again. When she came to him there was nothing but the history of the eleven months' pregnancy. He examined her carefully under ether. She had a profuse secretion of milk in the breasts; and he could feel through the vaginal walls a hard irregular tumour, but nothing that resembled a collapsed head—for if the child had been then dead two months there should have been considerable softening of the head. So that at first he was under the

impression that she had a fibrous tumour. He went to the country, and after his return he received a message by telephone that she was in hard labour with strong pains. During the extra three months she had had good health, but in the last week she had a feeling of great lassitude. On a vaginal examination he found that the top of her vagina was funnel-shaped, and he could not feel where it was continued upwards into the uterus. He put her under ether, and inserted a catheter, which brought away some decomposing blood. He then tried to break through the thin partition of the vagina with his finger and felt the hard bone of the child's head. He dilated the vagina with Barnes' bags. The extraction of the child was a very difficult process and occupied four and a half hours. Since the operation she had got on very well, but had had a rise of temperature to 101°, and washing out the uterus was attended with a fœtid smell not of the ordinary kind. There must have been something wrong with the muscles of the uterus, or else she would not have had these delayed labours. The placenta was an extremely interesting structure. It was flattened out by the tremendous compression it had undergone. There had been undoubtedly cases in which the child was retained for an indefinite time, even though the cavity of the uterus had a normal opening, but he had never met with a case like the present.

Double Pyosalpinx.

Dr. William Smyly exhibited appendages removed from a case of double pyosalpinx. The patient was admitted into the Rotunda Hospital on the 7th of last July. She had had five miscarriages and had suffered from gonorrhœa. Five years after her last pregnancy she complained of menorrhagia and dysmenorrhœa, and she had leucorrhœa also. On a physical examination he found the uterus anteposed, with an elastic swelling in the posterior *cul-de-sac*. Considering the physical character of the tumour and the history of the case, he concluded that the tube was distended with pus, and he determined to remove it. During the operation he put his finger to the back of the uterus and found that the tube was brittle and that it broke. Fearing that fluid would get into the wound he clipped the tube. It seemed to be almost of the consistency of wax. On proceeding to remove the appendages they proved to be very brittle and broke in two places, and a considerable quantity of pus escaped. After having washed out the parts with hot water he inserted a drainage-tube, which was left in for seven days, during which there was a considerable discharge from it. When Dr. Bagot tried to remove the tube he found that it had become fixed by granulation having taken place at each end of it. He curetted the inside of the tube and got it away easily. The patient had no rise of temperature, had made a perfect recovery, and had left the hospital; and she had enjoyed good health ever since.

SECTION OF PATHOLOGY.

President—E. H. Bennett, M.D.
Sectional Secretary—J. B. Story, F.R.C.S.I.

Friday, December 5, 1890.

The President in the Chair.

The late Anthony H. Corley, M.D.

The following resolution was unanimously agreed to on the motion of the President of the Section :—

"Resolved—That this meeting of the Pathological Section of the Royal Academy of Medicine desires to record its sense of the loss which the Academy has sustained by the lamented death of Dr. Anthony H. Corley, formerly President of the Section, and to express the deep sympathy which the members of the Academy feel with his afflicted family."

Congenital Deformity.

The President (Dr. E. H. Bennett) exhibited a dissection of an upper limb congenitally deformed, and a cast of the limb taken previous to its dissection.

The deformity was one to which special attention had been directed by the writings of Montgomery and of Sir James Simpson on intra-uterine amputations, and particularly by the latter author in his paper "On the Rudimentary Reproduction of Extremities after their Spontaneous Amputation."

Further interest attaches to this description, as Sir James Paget has, with some slight reserve, adopted the theory put forward by Simpson in his lecture on the "Reproduction of Injured and Lost Parts," in his "Surgical Pathology."

Later writers have held opposite opinions as to the explanation of the deformity. Mr. Annandale unhesitatingly adopted the views of Simpson, while Dr. Sturges, writing in 1880, opposed these.

While many cases very similar in their external characters have been recorded, but few records of dissections of limbs so deformed have been published, the majority of observations having been made on the living.

The present specimen, and that recorded by Dr. Cayley in 1865, have the merit of exposing the anatomical details, and these appear to be similar in all essential details. Dr. Bennett then detailed the facts of the case—viz., the left upper extremity of a young man which terminated at the middle of the forearm in a stump, well formed and plump ; from the palmar aspect a knob projected which carried on its summit a row of five rounded tubercles. Above the knob and its row of tubercles

there was a circular scar on the limb, and at either side of the knob, opposite to the extremities of the bones of the forearm and within the circular scar, there were two minute depressions in which the ends of the bones of the forearm were attached to the skin.

In these details the specimen agreed exactly with Simpson's cases and those already quoted. Its dissection, as stated, agreed with Dr. Cayley's.

Simpson states his theory of the cause of the deformity thus:—"It is interesting, however, not so much from the frequency with which it is met with, as from the nature of the abnormal structure itself, consisting, as I believe it does, of a tendency in the human subject to the reproduction of a lost extremity."

Dr. Bennett then stated the results of the dissection, which showed that though atrophic in a high degree, the nerves, the blood-vessels, and the tendons, such as they were, passed along through the stump to reach and terminate in the knob and tubercles which represented the hand and fingers.

This fact at once put aside the amputation theory, for it would appear impossible, had a complete section taken place, that the continuity of all structures should be established with those of a new growth.

Dr. Bennett then discussed the views put forward by Dr. Sturges, who decided that because the anatomical evidence disproved the occurrence of amputation, these specimens must be entirely dissociated from intra-uterine amputations. It appeared more rational to regard them as examples of arrest of development, caused by constriction similar to that which, when complete, causes amputation, than to refer them to some unknown local disease of the embryo.

This specimen furnished additional matter of pathological interest, for the brain, like the parts of the brachial plexus concerned in the supply of the hand and forearm, is atrophic at the region of the motor area of these parts. The ascending parietal convolution in a normal brain in this position presents an average diameter of 12 mm. In this specimen, in the region of the arm centre, it is thinned down to rather less than 5 mm.

The brain will be photographed and figured by Professor Cuningham.

Dr. Frazer referred to a remarkable case recorded by the late Dr. Adams, of a young boy who got a blow of an Italian iron which perforated his skull, and caused the escape through the wound of a considerable portion of his brain. His arm on the side opposite to the wound ceased to grow in proportion with his other arm.

Dr. Bewley said it was difficult to understand how the umbilical cord could amputate a limb by pressure without interfering with its own blood-supply.

Mr. Patteson remarked that if the lesion in question had been produced by a constricting band it could have acted only by interfering

with the blood-supply of the limb; and that being so, one would have expected to find the calibre of the arteries diminished. But it appeared that in the present instance they could be traced of full size down to the stump. It must have been caused by nerve disturbance; and if in this case there was a lesion of the motor cortex corresponding to the disturbance of the nerves leading to the part, he thought that what they had to deal with was, primarily, an arrested development of the motor area of the brain, and not an ascending degeneration of the nerves of the part, with a corresponding degeneration of the motor area of the brain.

Dr. Bennett, in reply, said he was quite familiar with all the cases of atresia, particularly Dr. Adams' cases. In those cases the atresia was a totally different thiug from what was seen in the present specimen. In the former cases the want of development was simply in respect of size, all the bones being perfect, just as was seen in the paralytic limb of an adult; and he had several times in dissections seen the cysts in the brain affecting the motor area. But the deformity here observable was totally different, for there were no carpal bones or fingers, but only knobs such as occurred about the first month of fœtal development; and these had stayed so, only retaining their connection with the tendons, nerves, and vessels. Dr. Bewley had asked what the constricting force was. The late Professor Montgomery, whose writings preceded those of Sir James Simpson—whose discussions were based on Professor Montgomery's observations—proved that the fœtus in the uterus, under certain conditions, became affected with diseases of various kinds occurring between the surfaces of the fœtal membranes, and arising from some inflammatory process. In the Museum of the College there was a specimen which bore out exactly those conditions. There was a fœtus with many fingers and toes amputated by intra-uterine adhesions. Where the cord alone was the constricting agent and became twisted, a little diminutive foot, about one-tenth of the size of the opposite foot, was seen hanging by a thread from the end of the stump, showing that the cord twisted round the limb had arrested the development of the foot, but had left the rest of the limb untouched. This was shown in many of Dr. Montgomery's cases. When he said that the arteries were carried down, he assumed it would have been understood that what he meant was that they were carried down in embryo, as it were, in minute threads which required the most careful dissection in order to disclose them. As to the question whether the primary nerve lesion was in the brain or not, the most skilled eye could not detect any inflammatory or pathological lesion in the brain area relating to the limb, with the exception of a diminution in its size.

Notes on the Pathology of a Dentigerous Cyst.

Dr. A. W. W. Baker made a communication on the pathology of a dentigerous cyst. A cyst about the size of a small pea was found attached to the palatine root of an upper molar tooth; it presented an unusual peculiarity in being lined with columnar ciliated epithelium, the occurrence of such epithelium being accounted for by the fact that masses of epithelium are frequently seen in the root membrane of teeth, and are thought to be the remains or *débris* of the enamel organ, the development of the cilia being a subsequent process. The cyst gave rise to a good deal of pain, and had semi-purulent contents. The communication was illustrated with microscopic sections and photographs.

The Irish Elk.

Dr. Frazer exhibited a number of pathological bones of the Irish elk, and made a communication thereon.

Spontaneous Enterectomy.

Dr. Birmingham submitted an example of spontaneous enterectomy.

Tricuspid Narrowing.

Dr. H. T. Bewley showed a heart, the subject of tricuspid narrowing. The patient from whose body it had been taken had severe rheumatism in 1878. He had come into the Adelaide Hospital in July, 1890, suffering from weakness, nausea, and constipation. The physical signs of mitral narrowing and of double aortic disease were noticed. After a stay of three weeks in hospital he died quite suddenly. The heart was enlarged, weighing $23\frac{1}{2}$ oz.; all the cavities were dilated and their walls hypertrophied. At the *post mortem* examination they were all found excessively full of blood. The tricuspid valves were adherent, the opening measuring 3 in. in circumference (normal, $5\frac{1}{2}$–6 in.). The mitral valves were also adherent, the opening measuring $2\frac{5}{8}$ in. in circumference (normal, $4\frac{1}{2}$ in.). The aortic valves were extensively diseased. The heart muscle was healthy. Other organs healthy. Dr. Bewley called attention to the rarity of the lesion, and to the fact that with tricuspid narrowing mitral narrowing practically always co-existed, and aortic disease in about 50 per cent. of the recorded cases.

Scirrhus Cancer of the Male Breast.

Mr. Patteson showed a specimen which had been removed in St. Vincent's Hospital by Mr. M'Ardle a few weeks previously. The patient was a strong, able-bodied man, sixty-seven years of age, with a good history, both family and personal. Last March he first noticed the nipple sore, but attributed it to the rubbing of his brace. Shortly after

he noticed a small nodule the size of a pea, which kept gradually increasing in size till his admission to hospital in October. At this time the tumour was about the size of a pigeon's egg, firmly adherent to the overlying skin and slightly to the underlying pectoral muscle. There were some enlarged glands in the axilla. The nipple was slightly retracted. Occasional shooting pains in the side and arm were the only symptoms of which he complained. The breast and three glands—the largest about the size of a small walnut—were removed, and the patient made an excellent recovery. On section the tumour proved to be a typical scirrhus, and numerous dense bands of fibrous tissue could be traced passing from the nipple into the stroma of the growth and causing the shrinking and retraction. The appearances seen in the glands were identical. Dense fibrous stroma enclosed masses of soft cellular elements. Mr. Patteson referred to the statistics of cancer, and found, as the result of a total of 1,781 cases of carcinoma of breast, only 1·38 per cent. occurred in males. Billroth gives a somewhat higher percentage, 2·77 in 252 cases. Sarcoma seems to be more common in the male heart, but the available statistics are not sufficient to establish accurately the relative frequency.

FATTY TUMOUR OF THE LABIUM.

Dr. Deekens, Philadelphia, reports a case of fatty tumour of the right labium majus in a woman sixty-one years old. "It measured four and a half inches in length, by two and a half in width, and weighed seven and a half ounces. The pedicle was slightly over two inches long, and when the woman was standing it pulled the labium down until it reached about one-third of the way down her thighs." The patient first noticed it fourteen years previously, when it was about the size of a pea.—*The Medical and Surgical Reporter*, No. 1,750.

ARTERIAL ANOMALIES.

At a meeting of the Pathological Society of Toronto, Ont., Dr. Primrose (*Canadian Practitioner*, August 1) showed a dissection of the great vessel arising from the arch of the aorta. The first vessel was a common trunk, one inch and a half in length, which bifurcated, in front of the trachea, into the right and left carotid; the next vessel to arise was the left subclavian; the right subclavian rose half an inch from the origin of the right and from the posterior surface of the arch. The artery then coursed upwards and to the right, crossing the spinal column obliquely, passing behind the trachea and the œsophagus.—*The Philadelphia Medical and Surgical Reporter*, August 30.

SANITARY AND METEOROLOGICAL NOTES.

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Vital Statistics

For four Weeks ending Saturday, November 29, 1890.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	Nov. 8.	Nov. 15.	Nov. 22.	Nov. 29.		Nov. 8.	Nov. 15.	Nov. 22.	Nov. 29.
Armagh -	10·3	5·2	31·0	10·3	Limerick -	13·5	18·9	22·9	18·9
Belfast -	19·5	19·3	23·4	25·1	Lisburn -	9·7	9·7	19·3	4·8
Cork -	16·9	22·1	17·5	23·4	Londonderry	19·6	19·6	30·3	25·0
Drogheda	4·2	12·7	29·6	16·9	Lurgan -	15·4	25·7	46·2	15·4
Dublin -	19·6	21·6	22·6	23·8	Newry -	14·0	21·1	17·6	10·5
Dundalk -	21·8	4·4	13·1	21·8	Sligo -	9·6	48·1	0·0	19·2
Galway -	13·4	23·5	16·8	37·0	Waterford -	13·9	11·6	32·4	11·6
Kilkenny	4·2	33·8	16·9	8·5	Wexford -	29·9	29·9	12·8	25·7

In the week ending Saturday, November 8, 1890, the mortality in twenty-eight large English towns, including London (in which the rate was 20·5), was equal to an average annual death-rate of 20·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·0 per 1,000. In Glasgow the rate was 23·5, and in Edinburgh it was 18·4.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 18·1 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in eight of the districts to 8·6 in Wexford—the 7 deaths from all causes registered in that district comprising 2 from whooping-cough. Among the 87 deaths from all causes registered in Belfast are 1 from whooping-cough, 2 from diphtheria, 2 from enteric fever, and 3 from

diarrhœa. The 11 deaths in Londonderry comprise 1 from enteric fever and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 144—82 boys and 62 girls; and the registered deaths to 140—64 males and 76 females.

The deaths, which are 45 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 20·7 in every 1,000 of the estimated population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 19·6 per 1,000. During the first forty-five weeks of the current year the death-rate averaged 26·0, and was 2·0 under the mean rate in the corresponding period of the ten years 1880–89.

The number of registered deaths from zymotic diseases is 18, being 9 below the average for the corresponding week of the last ten years, and 2 under the number for the previous week. The 18 deaths comprise 2 from measles, 2 from typhus, 1 from diphtheria, 6 from enteric fever, 3 from diarrhœa, and 1 from dysentery.

During the week ended October 25, 28 cases of enteric fever were admitted to hospital. In the following week the number of admissions fell to 19, and in the week now under review it further declined to 16. Fourteen enteric fever patients were discharged, 1 died, and 88 remained under treatment on Saturday, being 1 over the number in hospital at the close of the preceding week.

Only 1 case of typhus was admitted to hospital against 7 in the preceding week and 14 in the week ended October 25. Two typhus patients died and 24 remained under treatment on Saturday, being 1 under the number in hospital on Saturday, November 1.

Eighteen deaths from diseases of the respiratory system were registered, being 5 over the low number for the preceding week, but 23 under the average for the 45th week of the last ten years. They consist of 13 from bronchitis, 4 from pneumonia or inflammation of the lungs, and 1 from croup.

In the week ending Saturday, November 15, the mortality in twenty-eight large English towns, including London (in which the rate was 20·1), was equal to an average annual death-rate of 21·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·4 per 1,000. In Glasgow the rate was 22·8, and in Edinburgh in was 14·2.

The average annual death-rate in the sixteen principal town districts of Ireland was 20·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·8 per 1,000, the rates varying from 0·0

in Limerick, Newry, Drogheda, Dundalk, Lisburn and Armagh, to 17·1 in Wexford. The 7 deaths from all causes registered in the last-named district comprise 4 from whooping-cough—of which disease the Registrar states "there is a severe epidemic in the district." Among the 86 deaths from all causes registered in Belfast are 3 from scarlatina, 1 from whooping-cough, 1 from enteric fever, and 5 from diarrhœa. The 5 deaths in Waterford comprise 3 from diarrhœa.

In the Dublin Registration District the registered births amounted to 143—77 boys and 66 girls; and the registered deaths to 152—72 males and 80 females.

The deaths, which are 31 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 22·4 in every 1,000 of the estimated population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 21·6 per 1,000. During the first forty-six weeks of the current year the death-rate averaged 25·9, and was 2·0 under the mean rate in the corresponding period of the ten years 1880-89.

Only 8 deaths from zymotic diseases were registered, being 14 below the average for the corresponding week of the last ten years and 10 under the number for the week ended November 8. They comprise 1 from whooping-cough, 2 from enteric fever, 2 from diarrhœa, and 1 from dysentery.

The number of cases of enteric fever admitted to hospital, which had fallen from 28 for the week ended October 25, to 19 for the following week, and to 16 for the week ended November 8, rose to 25. Nine enteric fever patients were discharged, 1 died, and 103 remained under treatment on Saturday, being 15 over the number in hospital at the close of the preceding week.

Four cases of typhus were admitted to hospital against 1 case in the preceding week, 7 cases in the week ended November 1, and 14 for the week ended October 25. Seven patients were discharged, and 21 remained under treatment on Saturday, being 3 under the number in hospital on Saturday, November 8.

Thirty-one deaths from diseases of the respiratory system were registered, being 13 over the number for the preceding week, but 10 under the average for the 46th week of the last ten years. They comprise 20 from bronchitis, 7 from pneumonia or inflammation of the lungs, 1 from croup, and 1 from pleurisy.

In the week ending Saturday, November 22, the mortality in twenty-eight large English towns, including London (in which the rate was 20·2), was equal to an average annual death-rate of 21·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·3 per 1,000. In Glasgow the rate was 23·9, and in Edinburgh it was 18·0.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 22·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·8 per 1,000, the rates varying from 0·0 in ten of the districts to 7·2 in Londonderry—the 17 deaths from all causes registered in this district comprising 1 from enteric fever and 3 from diarrhœa. Among the 104 deaths from all causes registered in Belfast are 1 from whooping-cough, 5 from enteric fever, and 4 from diarrhœa.

In the Dublin Registration District the registered births amounted to 180—88 boys and 92 girls; and the registered deaths to 157—77 males and 80 females.

The deaths, which are 40 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·2 in every 1,000 of the estimated population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 22·6 per 1,000. During the first forty-seven weeks of the current year the death-rate averaged 25·9, and was 2·1 under the mean rate in the corresponding period of the ten years 1880–89.

The number of registered deaths from zymotic diseases is 17, being 10 below the average for the corresponding week of the last ten years, but 9 over the number for the week ended November 15. The 17 deaths comprise 1 from scarlatina, 1 from influenza, 4 from whooping-cough, 2 from diphtheria, 1 from ill-defined fever, 4 from enteric fever, and 2 from diarrhœa.

The number of cases of enteric fever admitted to hospital, which had risen from 16 for the week ended November 8, to 25 for the following week, fell to 19. Eighteen enteric fever patients were discharged, 3 died, and 99 remained under treatment on Saturday, being 4 under the number in hospital at the close of the preceding week.

Three cases of typhus were admitted to hospital against 4 in the preceding week. Three patients were discharged, and 21 remained under treatment on Saturday, being equal to the number in hospital on Saturday, November 15.

Thirty-one deaths from diseases of the respiratory system were registered, being equal to the number for the preceding week, but 13 under the average for the 47th week of the last ten years. They comprise 18 from bronchitis and 9 from pneumonia or inflammation of the lungs.

In the week ending Saturday, November 29, the mortality in twenty-eight large English towns, including London (in which the rate was 18·0), was equal to an average annual death-rate of 19·0 per 1,000 persons

living. The average rate for eight principal towns of Scotland was 20·7 per 1,000. In Glasgow the rate was 24·7, and in Edinburgh it was 15·3.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·8 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·4 per 1,000, the rates varying from 0·0 in seven of the districts to 8·6 in Wexford—the 6 deaths from all causes registered in that district comprising 2 from whooping-cough. Among the 112 deaths from all causes registered in Belfast are 1 each from scarlatina, typhus, whooping-cough, and diphtheria, 7 from enteric fever, and 3 from diarrhœa. The 14 deaths in Londonderry comprise 1 from scarlatina, 2 from enteric fever, and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 147—62 boys and 85 girls; and the registered deaths to 165—99 males and 66 females.

The deaths, which are 22 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 24·4 in every 1,000 of the estimated population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 23·8 per 1,000. During the forty-eight weeks of the current year, ending with Saturday, November 29, the death-rate averaged 25·8, and was 2·2 under the mean rate in the corresponding period of the ten years 1880–89.

Nineteen deaths from zymotic diseases were registered, being 2 over the number for the preceding week, but 4 below the average for the 48th week of the last ten years. They comprise 3 from whooping-cough, 2 from ill-defined fever, 9 from enteric fever, and 3 from diarrhœa.

The number of cases of enteric fever admitted to hospital is 18, being 1 under the number for the preceding week, and 7 under that for the week ended November 15. Twenty enteric fever patients were discharged, 1 died, and 96 remained under treatment on Saturday, being 3 under the number in hospital at the close of the preceding week.

Eight cases of typhus were admitted to hospital against 3 admissions in the preceding week, and 4 in the week ended November 15. Six patients were discharged and 23 remained under treatment on Saturday, being 2 over the number in hospital on that day week.

The hospital admissions for the week include, also, 3 cases of measles.

Thirty-two deaths from diseases of the respiratory system were registered, being 1 over the number for the preceding week, but 12 under the average for the 48th week of the last ten years. They comprise 19 from bronchitis and 10 from pneumonia or inflammation of the lungs, and 2 from croup.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of November, 1890.

Mean Height of Barometer, - - -	29·827 inches.
Maximal Height of Barometer (on 19th, at 9 p.m.),	30·403 „
Minimal Height of Barometer (on 6th, at 8 p.m.), -	28·737 „
Mean Dry-bulb Temperature, - - -	44·3°.
Mean Wet-bulb Temperature, - - -	42·8°.
Mean Dew-point Temperature, - - -	41·0°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·264 inch.
Mean Humidity, - - - - -	88·6 per cent.
Highest Temperature in Shade (on 19th), - -	63·0°.
Lowest Temperature in Shade (on 29th), - -	26·3°.
Lowest Temperature on Grass (Radiation) (on 29th),	22·0°.
Mean Amount of Cloud, - - - -	60·0 per cent.
Rainfall (on 27 days), - - - -	4·212 inches.
Greatest Daily Rainfall (on 10th), - - -	·625 inch.
General Directions of Wind, - - -	S.W., W.

Remarks.

A wet, stormy, cheerless month, reminding one of November, 1888, which was the wettest and most stormy November observed in Dublin for more than a quarter of a century. The weather remained open until the 24th, when a spell of snowstorms and bitter cold set in with peculiar suddenness. On the 19th the thermometer rose in Dublin to 63° in the screen; on the 29th it fell to 26·3°. On several evenings bright "after-glows" were seen. A snowstorm on the night of the 26th–27th was the heaviest experienced since the memorable storm of January 17, 1881.

In Dublin the mean temperature (45·3°) was somewhat above the average (44·7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 44·3°. In the twenty-five years ending with 1889, November was coldest in 1878 (M. T. = 38·2°), and in 1870 (M. T. = 42·2°), and warmest in 1881 (M. T. = 50·3°). In 1886 and in 1889, the M. T. was as high as 46·4°; in the year 1879 (the "cold year"), it was 43·9°; in 1887, it was as low as 42·6°; and in 1888, it was as high as 47·5°.

The mean height of the barometer was 29·827 inches, or 0·033 inch below the average value for November—namely, 29·860 inches, and 0·357 inch below the mean pressure in November, 1889—viz., 30·184 inches. The mercury rose to 30·403 inches at 9 p.m. of the 19th, and fell to 28·737 inches at 8 p.m. of the 6th. The observed range of atmospherical pressure was, therefore, 1·666 inches—that is, nearly an inch and seven-tenths.

The mean temperature deduced from daily readings of the dry bulb

thermometer at 9 a.m. and 9 p.m. was 44·3°, or 6·6° below the value for October, and 14·6° below that for September, 1890. The arithmetical mean of the maximal and minimal readings was 45·3°, compared with a twenty-five years' average of 44·7°. On the 19th the thermometer in the screen rose to 63·0°—wind, S.W.; on the 29th the temperature fell to 26·3°—wind, W. The minimum on the grass was 22·0° also on the 29th.

The rainfall was as much as 4·212 inches, distributed over 27 days—both rainfall and rainy days were therefore largely in excess of the average values. The average rainfall for November in the twenty-five years, 1865–89, inclusive, was 2·452 inches, and the average number of rainy days was 17·0. In 1876 the rainfall in November was large—3·614 inches on 20 days; in 1872, also, 3·414 inches fell on 24 days; in 1887, 3·012 inches fell on 18 days, and in 1888 6·549 inches fell on 26 days. On the other hand, the rainfall in 1889 was only ·929 inch on 9 days; in 1870, only 1·218 inches were measured on but 11 days, and in 1879 only 1·251 inches on but 10 days. The excess of the rainfall in 1890 and the equally marked deficit in 1889 are evident from these figures.

A solar halo was seen on the 13th. High winds were noted on as many as 12 days, and attained the force of a gale on 5 occasions—the 2nd, 6th, 14th, 23rd and 30th. The atmosphere was more or less foggy in Dublin on the 13th, 17th, 18th, and 26th. Hail fell on the 24th and four following days. Sleet and snow fell on the 26th, 27th, and 28th.

Very rough, unsettled, rainy weather prevailed during the greater part of the week ended Saturday, the 8th. There were, however, some clear intervals, Wednesday and Friday in particular being fine and bright. A succession of cyclonic systems swept across Western Europe, accompanied by gales and rains. Of these the deepest were observed on Sunday and Thursday. At 8 a.m. of the former day the barometer was down to 28·69 inches at Sumburgh Head, in the Shetlands, while it stood at 30·22 inches at Lisbon. Needless to say there were heavy S.W. to N.W. gales over the British Isles. During the next three days a complex low-pressure system travelled south-eastwards across these Islands to Germany. But it was on Thursday that the most destructive and fatal disturbance of the week advanced from the Atlantic. Even in Dublin the barometer fell to 28·737 inches at 8 p.m. In front of the centre of this depression southerly gales prevailed, in its rear whole gales from W., N.W., and N. were experienced. A new disturbance caused a heavy rainfall on Saturday. In Dublin the mean height of the barometer was only 29·425 inches—the highest reading was 29·876 inches at 9 p.m. of Wednesday (wind, N.W.); the lowest was 28·737 inches twenty-three hours later (wind, W.). The corrected mean temperature was 46·8°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 44·9°. The

rainfall was ·969 inch on seven days. The wind varied between S.W. and N.W.

Very changeable, rainy weather prevailed in Ireland almost throughout the second week also. Conditions were more favourable in England, especially in the S.E. and E. of that country. The general distribution of atmospherical pressure was: anticyclonic over Northern Europe and also over the Peninsula—cyclonic in the British Islands and their neighbourhood. The centres of low pressure were usually found off the W. and N.W. of Ireland and of Scotland; but on Sunday such a centre lay over the N.E. of England, while very heavy rain fell on the east coast of Scotland, in Cheshire, and in North Wales. On Monday night there was a downpour in and about Dublin. Thursday and Saturday were fine, bright days, and on Friday—with a S.W. wind, clouds and rain—came a great rise of temperature—from 39·2° to 60·6° in a few hours. An anticyclone spread over Ireland on Saturday. In Dublin the mean height of the barometer was 29·678 inches. The corrected mean temperature was 44·3°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 42·5°. Rain fell on six days to the amount of 1·107 inches, the heaviest fall in 24 hours being ·625 inch on Monday. The wind varied between S. and N.W.

The remarkable mildness of the weather throughout Western Europe was the chief feature of the third week. On Wednesday the thermometer rose above 60° in England and Ireland and to that point in Scotland. All through the week an area of high atmospherical pressure held over France and Germany, while depressions of no great intensity passed northeastwards along the coasts of Ireland, Scotland, and Norway. Hence there was a continued prevalence of S.W. winds, accompanied by high temperature and occasional but not excessive rains. In Russia snow fell heavily and, as a result, severe frost set in, the thermometer sinking to −11° Fahr., or 43° below freezing point, at Archangel on Tuesday, and at Moscow to −11° on Wednesday and −12° on Friday. In Dublin a very dense vapour fog was observed on Tuesday, but next day the temperature rose to 63° in the screen. This was the highest temperature recorded in Dublin in November since the 6th of this month in the year 1872. In Dublin the mean height of the barometer was 30·205 inches, pressure rising to 30·403 inches at 9 p.m. of Wednesday (wind, S.W., light). The corrected mean temperature was 50·4°, or 6·1° above that of the previous week. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 50·3°. Rain fell on five days to the amount of ·458 inch.

The week ended Saturday, the 29th, witnessed an extraordinary change all over western and central Europe from the abnormally mild weather previously so prevalent to heavy snowstorms and extreme cold. The way in which this change was brought about is noteworthy. On Sunday the centre of a vast and deep depression, in which the barometer was down to

28·70 inches, lay over the Christiania Fjord in Norway; south of the centre warm S.W. and W. gales were blowing, while to the northward of it an inrush of intensely cold E. wind took place. This cold current curved southwards and swept over the British Isles as a keen N. wind on Monday, accompanied with heavy rain at first, and hail and snow afterwards. On Wednesday and Thursday Dublin was visited by the heaviest snowstorm which has been experienced in this city since January 17, 1881. In the suburbs the snow lay to the depth of from 7 to 8 inches. In the S.E. of England the fall was even greater and a keen frost prevailed, the thermometer falling to 17° in the screen at Dungeness on Friday morning. In Dublin a thaw occurred on this day, but sharp frost prevailed on Saturday morning, when the minimum was 26·3°. The mean height of the barometer was 29·998 inches, pressure ranging between 29·325 inches at 9 p.m. of Sunday (wind, W. by N., strong), and 30·288 inches at 9 a.m. of Wednesday (wind, N.E., moderate). The corrected mean temperature was 39·5°, the mean dry bulb reading at 9 a.m. and 9 p.m. being 38·3°. The rainfall, which was largely in the form of snow and hail, measured 1·099 inches on seven days—the heaviest fall in 24 hours being ·510 inch on Wednesday, the 26th.

Sunday, the 30th, was a day of storm and rain, and the snow rapidly disappeared under the influence of a S.W. gale and warm rain.

The rainfall in Dublin during the eleven months ending November 30th has amounted to 25·706 inches on 189 days, compared with 15·378 inches on 141 days during the same period in 1887, 25·768 inches on 173 days in 1888, 25·718 inches on 178 days in 1889, and a twenty-five years' average of 25·292 inches on 177·4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in November, 1890, was no less than 5·970 inches, distributed over 28 days. Of this quantity 1·000 inch fell on the 6th, and ·790 of an inch on the 10th.

UTERINE HERNIA THROUGH THE CICATRIX OF A CÆSAREAN SECTION.

Dr. Sparling, of Dresden, reports the case of a woman, thirty years of age, who was suffering from hernia of the uterus through the cicatrix of a Cæsarean section. The woman was seven months pregnant, and her labour had commenced; she was delivered of a dead child, the head having been pulled off the body by the obstetrician's efforts.—*The Montreal Medical Journal*, Vol. XIX., No. 3.

FATAL HÆMORRHAGE FROM LACERATION OF THE VULVA.

Dr. Drzmalik reports (*Wiener klin. Wochenschrift*) a case of fatal hæmorrhage from laceration of the vulva immediately above the *meatus urinarius*. The accident is supposed to have been caused by over-extension of the thighs by the patient, who was in her eighth month of pregnancy.

PERISCOPE.

HERNIA AT THE INNER INGUINAL RING.

Dr. Cartledge reports a case in which he performed laparotomy for intestinal obstruction, which was found to be caused by a knuckle of gut being strangulated at the right internal inguinal ring. "The constricting ring had nearly cut through the several coats of the bowel on one side, the serous coat being entirely destroyed. The integrity of the knuckle of bowel was not much impaired." The patient, a young man of twenty-four years of age, made a good recovery.—*The American Practitioner and News*, No. 123.

WHOOPING-COUGH.

M. Beall recommends the following for children of from three to four years of age who are suffering from whooping-cough:—Thymol, 1 gramme 26 cg.; carbolic acid, 15 grammes; essence of sassafras, 7·5 grammes; essence of eucalyptus, 7·5 grammes; liquid tar, 7·5 grammes; essence of turpentine, 7·5 grammes; ether, 3·75 grammes; alcohol to make 90 grammes. Mix. Thirty drops of the liquid to be poured on a handkerchief and fastened round the child's neck. The application may be renewed every two or three hours.—*Les Nouveaux Remèdes*, No. 19.

INTERLOBULAR PYOPNEUMOTHORAX.

At a meeting on the 20th of August of the Académie de Médecine of Paris, M. M. Hache reported a case of interlobular pyopneumothorax in a patient twenty years of age, caused by the stab of a knife in the dorsal region. When seen the patient had a fistulous opening discharging fœtid pus, the amount of which greatly increased on coughing. The fistula was well washed out and a drainage-tube inserted, and the patient made a good recovery.—*La France Médicale*, No. 35.

SALICYLIC ACID IN PSORIASIS.

The Maryland Medical Journal recommends an ointment of 60 grains of salicylic acid to an ounce of lanoline as an excellent remedy for chronic psoriasis.

PUERPERAL ECLAMPSIA.

Dr. Cecil (*The Am. Pract. and News*), in an able review of the treatment of eclampsia, concludes that the correct management of this affection is—1st. Control or modify the convulsion by chloroform. 2nd. Give chloral with a free hand to prevent recurrence. 3rd. Give a brisk aperient: croton oil. 4th. Deliver if the fit recurs.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. III.—*Sclerodɐrma ; Hemiatrophy of Face and Limbs.*[a] By C. J. NIXON, M.D.; Senior Physician, Mater Misericordiæ Hospital; Professor of Medicine, Catholic University.

HEMIATROPHIA FACIALIS is sufficiently uncommon to deserve that it should be carefully noted, and its origin traced, if possible, to some definite cause. Still more worthy of record is a case in which scleroderma of unilateral distribution caused not alone atrophy of one side of the face, but a like atrophic condition of the limbs and trunk on the same side.

For the particulars of the case I am indebted to my resident pupil, Mr. Barragrey, who made some very careful observations regarding the distribution of the skin affection :—

CASE.—The patient, who is exhibited, is a boy of eleven years old. He is of a bright, cheerful disposition, and the account which he gives of his ailment is, I believe, a trustworthy one. About 12 months ago, being then in perfect health and free from all trace of bodily deformity, he received from his master, whilst at school, a violent kick in his left gluteal region. He felt very sick after the kick, had to go home, and was troubled with headache, sickness of stomach, and general feverishness. He kept his bed for a day and then went about, but with some difficulty, as he found his left leg weak and somewhat stiff. A month afterwards he remarked that the skin about his ankle was very stiff and tight, and he had

[a] Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, Dec. 19, 1890. [For the discussion on this paper see page 161.]

at the same time some difficulty in using his knee. Shortly afterwards a band of redness made its appearance along the inner side of the thigh, corresponding in position to the region of distribution of the internal cutaneous nerve. It was about two inches in breadth and extended from the symphysis pubis downwards and slightly backwards to about an inch and a half below the knee-joint. Some pain, heat, and tenderness existed in connection with the inflammation, and the skin became hard, tense, and stiff. About the same time he complained of some soreness and stiffness extending up the left side of the trunk, the left side of the face, and the left arm. A fortnight afterwards a patch of redness appeared under the left collar bone, at first of small size, but gradually increasing until it covered an area of about six square inches, and extending from the middle of the sternum upwards and outwards to within an inch of the acromion process. The situation of the reddened patch corresponded very closely to the distribution of the superficial descending branches of the cervical plexus. Soon afterwards a reddened band made its appearance on the left arm, extending from the shoulder, running down the median line of the arm, implicating the biceps tendon and extending downwards along the forearm as far as the styloid process of the radius. No change took place that the patient can recollect for some three or four weeks, but at the end of that time the redness changed to a dark brown tint, the veins at the borders of the patches became distended, and a gradual stiffening of the left limbs and left side of the chest and abdomen was developed. The stiffness passed into a condition of contracture, so that the forearm became flexed upon the arm and the leg upon the thigh. The thumb was forcibly flexed upon the palm and could with difficulty be straightened out by the boy's right hand. The condition of contracture continued for about four months when it gradually subsided and the patient could extend his arm to a limited extent and his leg so as to be able to put his heel to the ground. More or less constantly during the progress of the disease pain was experienced along the inner side of the left thigh, and a feeling of great stiffness and rigidity over the left side of the body. There were no pains in the joints or other evidences of rheumatism. The patient himself and his friends noticed the deformity in connection with his face—a deformity rendered more remarkable by the progressive development of alopecia.

The family history in connection with the patient is an exceptionally good one, as there were no traces of nervous or thoracic disease in the parents, brothers, or sisters. The boy gave no history of unusual exposure to wet or cold; his dietary, like that of most of the poor in the west of Ireland, consisted of Indian-meal stirabout, potatoes and milk, and once a week bacon for dinner.

When admitted to hospital, on the 27th of June, 1890, the patient

presented appearances to some of which I will now direct attention. The stiffness and feeling of tension have to a great extent subsided in the arm and leg; the flexion of the forearm of the arm which then existed has almost completely subsided, and there are very distinct evidences of the scleroderma having undergone a process of involution. Quite sufficient however remains to clearly indicate the nature of the disease.

The first thing noticeable about the patient is the hemiatrophia facialis, as is usual in such cases, on the left side. With atrophy of the side of the face is associated atrophy of the left half of the tongue, and of the left arch of the palate. It will be observed that the tongue when protruded deviates markedly to the left side, but the condition of atrophy is best observed when the tongue lies relaxed within the oral cavity. The mucous membrane of the left half of the mouth is apparently thicker and more opaque than that of the right side.

The condition of the eye and orbit was carefully examined by Mr. Werner, Ophthalmic Surgeon to the Mater Misericordiæ Hospital. Vision was found to be normal. The left orbit was appreciably smaller than the right. The cilia upon the left upper and lower lids were almost absent.

The integument over the left side of the face generally and side of the head is thicker than that of the right side. It is in parts difficult to pinch up and harder than normal. Along the left vertical ramus of the lower jaw may be seen, though indistinctly, a patch of morphœa. This was well marked at the time of admission. The hair over the head generally is thin, and on the left side there is well-marked alopecia. The eyebrows and eyelids are much less marked on the left than the right side.

There is no alteration of smell, taste, or hearing.

Travelling downwards we find over the outward and lower part of the neck an area of pigmented skin, brownish in colour, and hard and dense to the touch. Under the left clavicle is the large patch before alluded to, and which now presents the ivory-like appearance and parchment-like feel of morphœa. Running down the arm is a band of morphœa shaded off by hardened skin. This band at the time of the patient's admission was intimately attached to the biceps tendon, and by its contracture caused flexion of the forearm. Corresponding to the left lumbar region and extending into the inguinal region is a large patch resembling in appearance the discoloration met with in morbus Addisonii. The inner side of the left thigh presents running along it a wide band of indurated skin tissue with morphœa blotches scattered through it.

There is a marked degree of atrophy of both the left arm and leg, and the shortening of the latter gives the patient a more or less limping gait. In progression the body tends towards the left side.

The measurements showing atrophy, taken by Mr. Barragrey, are as follows:—

	inches.
Top of acromion process to tip of styloid process of radius—right side	17
„ „ left side	16½
„ extremity of right middle finger -	23¼
„ „ left „ - -	22½
From anter. sup. spine of ilium to tip of external malleolus—right side	29
„ „ left side	28½
Girth of forearm 2 inches below elbow—right side - -	7
„ „ left side - -	6
Around biceps—right side - - - - -	7½
„ „ left side - - - - -	6½
„ right calf - - - - - -	9
„ left „ - - - - - -	7½
„ right thigh - - - - - -	14
„ left „ - - - - -	12

Dense or tight skin is met with—

1. Over left side of head.
2. Left side of face.
3. Partially over left side of neck.
4. Over front of left arm and forearm, and covering left wrist.
5. Over inner side of left thigh, and generally over left lower leg and foot.

There is no lowering of sensibility anywhere. There is hyperæsthesia as to tickling over the left side generally.

There are no evidences present of thoracic or abdominal disease—functional or organic.

The temperature is the same on both sides of the body, viz.:—98·6° F.

The treatment adopted in the case consisted in keeping the patient warmly covered, using warm baths and massaging the limbs, free inunction of lanolin into the sclerodermatous patches, and the administration internally of cod-liver oil and a mixture containing small doses of the liquor arsenici hydrochloricus, tincture of perchloride of iron, and hydrochlorate of quinine.

Although the disease, of which the case just exhibited is an example, is one of rare occurrence, its nature and course have received a very considerable amount of attention from physicians. It was specially described by Willan under the name of "ichthyosis cornea," and subsequently, in 1842, by Thirial as "sclerème des adultes." The term sclerema is now, however, restricted to the hidebound disease, first described by Underwood, which is met with as a congenital affection or one occurring within the first ten

days of life; whilst, following the suggestion of Kaposi, scleroderma is applied to the extreme induration and rigidity of the skin met with apart from the infantile condition.

Dr. Crocker points out that three classes of the affection are met with:—

1. Where the skin affection is diffuse and symmetrical.
2. Where it is circumscribed.
3. Mixed cases.

The case of the boy exhibited belongs to the last class, but it appears to present some unusual features. In the classical case recorded by Addison, which furnishes the model for Plate XLIV. of the New Sydenham Society's Atlas, whilst the scleroderma was unilateral, morphœa developed on the opposite side of the face and produced in it hemiatrophia. In my case scleroderma is strictly unilateral, the patches of morphœa are developed over the affected area, and there is a general condition of hemiatrophy of the face and limbs.

The relation of morphœa to scleroderma appears to be of a twofold nature. Patches of morphœa first make their appearance, and subsequently a condition of diffuse scleroderma is developed, or morphœa is either engrafted on the sclerodermatous areas or occurs in parts of the body at a distance from the primary affection. In Dr. Gascoigne's case the morphœa spots first made their appearance on the right thigh, increased in number, and gradually spread over the surface of the body. Three years later the patient developed a "pasty œdema" of the legs and trunk, and shortly afterwards a condition of general atrophic scleroderma set in, the sclerosis spreading diffusely from the morphœa patches, which gradually lost their concavity and defined outline. This case is of some interest in the contradiction which it affords to the view expressed by Mr. Hutchinson, who holds that morphœa never spreads, but increases by fresh patches forming near and uniting by coalescence with the primary patch.

The connection between scleroderma or morphœa and hemiatrophia facialis progressiva is one of considerable interest. The atrophic affection is an acquired one, being most frequently met with between the tenth and fifteenth years of life. The first change noticed is in the soft parts—a patchy discoloration appearing upon the skin, which becomes thin and emaciated, whilst the subcutaneous fat undergoes gradual absorption; the hair of the head, beard, eyebrows, and eyelashes undergoes change and may fall

out; the skin becomes dense and almost cicatricial in character; whilst each feature, including the brow, eye, nostril, lip, cheek, and chin, with half the tongue and half the palatine arch, undergoes a progressive atrophy, which is accompanied by a diminution in the volume of the bones. Lande's theory of the origin of the disease assigned it to a primary atrophy of the fatty tissue and of the cells and fibrils of the connective tissue, leaving the elastic tissue unaltered; whilst Duhring describes unilateral facial atrophy as a variety of morphœa. If the latter view be accepted, and the natural history of the disease lends considerable support to it, the starting point of facial hemiatrophy is to be found in a disturbed innervation which involves the region of distribution of the fifth nerve. Most, if not all, cases of morphœa are developed in patches corresponding to the distribution of cutaneous nerves, and their close association with neuralgic conditions show clearly their dependence on altered nervous influence. About a year ago I saw a patient who was complaining of a severe form of right tic douloureux. I have had within the past month an opportunity of again examining him. He experienced very little alleviation from the attacks of paroxysmal pain, but a remarkable change has developed over the area of distribution of the right supra-orbital nerve. The hair over the right half of the frontal bone was considerably thinned and of a steel-gray colour, whilst the skin over the same area presented four or five linear bands of morphœa, glistening and waxy-like in appearance.

Although, however, most, if not all, cases of hemiatrophia facialis are associated with a nervous disturbance related to the area of distribution of the fifth nerve, there are some grounds for believing that the morbific influence is exercised not through the fibres of the trigeminus, but by the sympathetic fibres which join it at the Gasserian ganglion, or by special nerve fibres which pass along the inner border of the fifth nerve. Sinitsen found, after removal of the superior cervical ganglion of the sympathetic, the inflammatory effects of section of the trigeminus were much lessened; whilst Merkel demonstrates that if a certain tract along the inner border of the nerve be alone cut there is no loss of sensation either in the cornea or other parts of the face, but inflammation comes on as usual. Merkel traces these fibres to a deep origin, apart from the rest of the nerve, and he regards them as trophic fibres.

In support of the view of the implication of the sympathetic

may be mentioned two cases recorded by Seeligmüller, in which the facial atrophy was produced by injury of the sympathetic. In the first the cord of the sympathetic and a part of the brachial plexus were injured in a child, who had had his clavicle and the neck of the scapula broken, and it was observed that facial atrophy was developed with myosis. In the second case a gunshot injury of the sympathetic and brachial plexus was followed by oculo-papillary symptoms and facial hemiatrophy. These cases point to the lesion of the sympathetic as being a paralytic one; whilst the often-quoted case of Brunner, on the other hand, points to the lesion as being an irritative one. Here, following an injury to the sympathetic, the usual results of irritation of the nerve were present—viz., dilatation and deficient reaction of the pupil, widening of the palpebral fissure, exophthalmos, deficiency of the secretion of tears, mucus, and sweat, and lowering of temperature. With these signs hemiatrophia facialis existed.

This variation in the conditions of the sympathetic gives grounds for believing that the atrophic lesion does not depend so much upon the sympathetic nerve itself as upon a disturbance of some influence, apart from vaso-motor and secretory ones, which is carried along the sympathetic to the tissues.

One cannot fail to be struck by a review of the multiform and serious disturbances of nutrition which are observed in various nervous diseases—from the transient erythema which accompanies a recurrent neuralgia to those grave lesions like acute decubitus, perforating ulcer of the foot, and the various articular and osseous degenerations which are met with in central or peripheral nervous disease. Does it not appear probable, especially from what is disclosed by pathology, that some influences beyond those of sensation, motility, blood supply and secretion, are exercised for the purpose of maintaining the normal structural composition of the tissues and of regulating their metabolism? The disturbances which follow section or injury to the trunk of the fifth nerve, and the paralytic secretions by the submaxillary gland after the nerves going to it have been divided, and its subsequent degenerative atrophy, constitute some of the arguments to prove that metabolism is influenced by the action of certain nerves which are called trophic nerves, whilst in disease, such disturbances of nutrition as those known as glossy skin, decubitus acutus and chronicus, the alterations of the nails and hair, and the affections of the joints and bones, are set down as being due to an alteration in normal

trophic influences. All the changes in the soft parts and in arthritic and osseous tissues met with in paralysis have been produced experimentally in animals by division of the nerves supplying the tissues, a general condition of degenerative atrophy affecting muscles, tendons, periosteum, and bones having been met with as a late result of the nerve section. The experiments of Mantegazza, Vulpian, von Ziemssen, Weiss, and Erb, are all in accord upon this point. Romberg had then good grounds for regarding the existence of trophic nerves as necessary to explain the phenomena of disease, and for looking upon hemiatrophia facialis as a tropho-neurosis—a view strongly supported by Samuel in his paper on "Die trophe-schen Nerven" (Leipzic, 1860). If the existence of trophic nerves be admitted, would it not be most probable that their distribution should be in the closest affinity to the distribution of nerves regulating blood-supply and removal of waste? For this reason I would be disposed to suggest that trophic nerves run for the most part in the sympathetic nerves, and that it is the implication of these nerve branches in the cervical sympathetic which explains the changes met with in facial hemiatrophy.

In alluding to the occurrence of lesions tabulated as trophic I referred to the different degrees of gravity or intensity of the various alterations of structure met with. No doubt the site of the lesion determined to a great extent the nature of the trophic change, but it must be conceded that the intensity of the disease, and the power of resistance to change in the organism, must influence the nature, as well as the gravity, of local disturbances of nutrition. It is this difference in the intensity of the processes constituting disease, which explains the variation in the progress and result of cases of the same disease. How different, for example, may be the course of cases of chronic tuberculosis, chronic Bright's disease, diabetes mellitus, or those cases of myelitis which constitute the system diseases of the spinal cord. So, likewise, atrophic changes depending upon a lesion of the trophic nerves may produce conditions dissimilar in their external characters, as well as in their gravity, though all having the common basis of being produced by a tropho-neurosis. In recognition of this close kindred between conditions apparently dissimilar, Sir Dyce Duckworth has suggested that the chain of relationship existing between atrophies affecting the skin, all dependent upon a common origin, might be arranged in an order of increasing gravity as follows:—

Area.
Canities.
Muscular and striated atrophy.
Glossy skin.
Scleroderma, including morphœa.
Hemiatrophy of face.

To this list I think might be added the gravest form of atrophy—viz., hemiplegic atrophy—an example of which I have had the honour of bringing before the Academy on this occasion.

ART. IV.—*On Extraction of Parietal Intra-Uterine Fibro-myomata through the Natural Passages by means of Professor Vulliet's method of Dilatation by Tampons.* By DR. EMILE JUILLIARD. Translated by CHARLES G. CUMSTON, First Assistant at Docent Kummer's Clinic, Geneva. Part III.

[*Continued from Vol. XC., page 379.*]

III. REPORT OF CASES AND CONCLUSIONS (WITH ADDITIONS BY THE TRANSLATOR).

I SHALL divide our cases into four categories—1. The cases where there was incision followed by spontaneous enucleation; 2. Those where incision was followed by partially spontaneous and partially forced enucleation; 3. Operations in which the incision was followed by neither spontaneous nor forced enucleation; 4. Cases ofdilatation without incision.

The first series is composed of four cases:—

CASE I.—(Vulliet, "Contribution à l'étude du traitement des fibro-myomes de l'utérus intra-pariétaux, de petites et de moyennes dimensions." Paris, 1885, page 4). "In 1882 I made my first operative attempt, and under these circumstances: treating a lady for grave hæmorrhages that were not arrested by any of the usual methods, I made a digital exploration of the uterine cavity. After the procedure already indicated I discovered in the superior part of the posterior wall a discoïd tumour, having the diameter of a two-franc piece (not quite so large as a two-shilling piece). It had the consistence usually presented in fibro-myoma; consequently it was distinct from the consistence of normal uterine tissue. This tumour gave me the impression of being nearer the mucous than the serous membrane. I knew that scarification of the mucous membrane covering a fibro-myoma is an excellent means of producing hæmostasis. My patient was in danger. I then decided to profit by the

dilatation for incising the mucous membrane of the uterus. I made an incision longer than the diameter of the tumour, and deep enough to reach the new growth. No accident occurred. The hæmorrhages stopped; the periods came back at their time in usual quantity. I intended to follow this case, when I learned that my patient had left Geneva without informing me. Six months afterwards I saw her again; she was in perfect health. By bi-manual exploration I found the uterus was normal in shape and size."

Case II.—(Vulliet, *ibidem*, page 5.) "In June, 1882, I performed a similar operation for a fibroma, having the diameter of a five-franc piece. It protruded slightly into the uterine cavity. The layer of tissue covering it was extremely thin. This, then, was not a typical intra-peritoneal fibro-myoma. Nevertheless, the greater part of the mass was encased in the wall, and it had the greatest resemblance to an interstitial fibroma. The incision did not give rise to any accident. The neoplasm began to come out of the cervix at the end of a week. I made frequent antiseptic injections, and attentively watched the descent of the flaps, and as by degrees they reached the vulva I resected them, after which the vagina was dressed with iodoform gauze. The elimination was completed at the end of three weeks. No fever existed."

These two cases were in private patients; I mention them because they prove the harmlessness of the incision, and also because they explain how I was led to deliberately attack small fibro-myomata entirely intra-parietal—that is to say, at equal distance from the mucous and serous membranes.

Case III.—(Vulliet, *ibidem*, page 5). "In the month of February, 1883, while replacing Professor Vaucher at the Maternity, I had the opportunity of performing a third operation. The patient had a typical interstitial fibro-myoma, encased in the anterior wall of the uterus, as large as a small hen-egg. This case was operated on before a large number of students, and I made it the subject of several clinical lectures. She was examined by the assistant of Dr. Fontanel's *service* and two students, and they also concluded that the tumour had the particular characters of fibro-myomata, so that the record of the case constitutes an indisputable document. Ida W., servant, unmarried, aged forty-four; had one child twenty years ago. The child, she said, was very large; she was three months getting well. About the age of thirty-seven her monthly periods, which had been up to that time normal, became more frequent and abundant. In her thirty-eighth year she had during eight months, and in her forty-first year during six months, a complete suspension of her terms; but except on these two occasions the menstruation took place every twenty-one, and even every fifteen, days. In spite of

her approach to the menopause, her periods increased in frequency and abundance. In December, 1883, and January and February, 1884, she bled without interruption, even when lying down. It was this that made her come into the Maternity. When we saw her in February, 1884, she was very thin, pale, and decidedly cachectic. The uterus is double the normal size, and not painful. Unable to work, she demanded treatment at any price. In the first clinical lecture I set forth the reasons which, under reserve of any results from the intra-uterine examination, led me to diagnosticate the tumour as a fibro-myoma. The following day the patient was anæsthetised, and we examined the uterine cavity by direct digital examination. The night before a sponge-tent was introduced into the cervix. When the patient was anæsthetised I brought the cervix into view with a speculum, and seized one of its lips with a pair of my forceps. The tent being withdrawn, I introduced the index finger as high as possible into the uterus; then by a gentle but continued traction I lowered the organ until my finger touched the fundus. Then confiding the forceps to an assistant, keeping the uterus down, I found, by utero-abdominal bi-manual exploration, a spherical, flattened mass in the anterior wall, well defined and hard, of a consistence analogous to that of fibro-myomata. The uterine cavity showed no deformity of its walls, no projection; only the exterior surface of the anterior wall, instead of presenting its normal curve forwards, seemed, on the contrary, convex and globular. I asked Dr. Fontanel to make an intra-uterine examination, and made him note all these particulars. My diagnosis was then confirmed: I had to do with a fibro-myoma of the typical intra-parietal variety. It seemed disposed to develop rather more into the abdominal than into the uterine cavity. I had a very clear idea of the thickness of the tissue covering the neoplasm. Encouraged by my previous experiments, and convinced of the harmlessness of an incision of the uterine wall, I decided to try to change the direction of the migration of the neoplasm by giving it an easy issue into the uterine cavity. An incision was also justified as a means of hæmostasis. I made an incision with a button-end bistoury, about a centimetre deep, beginning at the fundus uteri, and ending a centimetre above the external orifice. The hæmorrhage was insignificant. The uterus was irrigated with a $\frac{1}{1000}$ sublimate solution, and was tamponed as well as the vagina with iodoform gauze. Two days after Professor Vaucher transferred the patient to his ward, and I did not see her again. I heard that a parametritis developed, from which she recovered perfectly. At this time the Maternity was infected, so that this complication is not to be wondered at. We took all possible measures, but without success. Infectious complications continued to appear even after energetic measures were taken by Professor Vaucher. Four months and eight days passed without news from this patient, when she came to the consultation at the Policlinic. She

said that she lost no blood during the week following the operation; but at the end of the week the hæmorrhages, although not so profuse as before, appeared two or three times a month. They diminished afterwards, and during the week preceding her first visit to the Policlinic no blood was lost. She only mentioned abundant whites flowing, without smell, during this last period. When I placed the patient in the examination chair I was in no way satisfied with the result of my operation—parametritis and return of the hæmorrhages; but the minute my finger touched the cervix my ideas changed. I felt, crowded between the lips, the inferior segment of a polypus, free on all its periphery, except in front, where it adhered to the cervical wall, exactly at the point where my incision ended. By penetrating into the uterus I found the same state as high up as my finger could reach. The polypus was free everywhere, excepting at its anterior part, from which the pedicle started, inserting itself on the entire length of the anterior wall, precisely where I made my incision in the month of February. This pedicle was the same length as my incision. I cannot complete my description better than by comparing this pedicle to the mesenteric attachment of the intestine. I insist on this particular disposition of the attachment of the polypus, because it proves that there was only a simple coincidence between my operation in February and the presence of a uterine polypus in June. *Per speculum* the polypus was well seen, as well as its inferior implantation on the anterior lip. I could have immediately performed ablation of the polypus; nevertheless, I explained to the students the reasons which caused me to defer it. There was no urgency for operating, for the patient had lost no blood, and no signs of inflammation or infection were present. On the other hand, there were the following disadvantages: the equator of the polypus had passed the internal orifice, so that the uterine contractions could, in the future, act with more energy on the bulk of the neoplasm. These contractions could, in lengthening, transform the membranous pedicle into a funicular pedicle, and accomplish the passage of the neoplasm out of the wall in the first place, and out of the uterine cavity afterwards. Once the tumour is completely isolated from the wall, the operation would be simpler and the chance of infection less. Ergotin was prescribed internally, and tampons of tannin and injections of sulphate of copper locally. In July Ida W. entered the Maternity, and I removed the polypus. The extirpation was very simple; the mass weighed about 10 grammes. I saw the patient often. She has since gone back to her work as servant, with health considerably better. The menstruation is very irregular and far from abundant. The uterus is very small in volume, as if it had undergone a certain decree of atrophy.

En résumé, the case was one of a small fibro-myoma, which,

interstitial in February, became intra-uterine in June; this transformation was due to the incision. This incision weakened the resistance of the muscular layer existing between the neoplasm and the uterine cavity, and had given a preponderance to the layer between the neoplasm and the peritoneal cavity. Nevertheless, the migration of the neoplasm was not of sufficient rapidity to hinder the intra-uterine mucous membrane from cicatrising, otherwise the fibro-myoma would have immediately been expelled, and no polypus would have formed.

Case IV.—Mrs. M. G., from St. Girod, aged thirty-seven; married at nineteen; had had neither child nor abortion. At the beginning of 1880 she noticed that her abdomen swelled. Since this she experienced difficulties in passing water, which became gradually more pronounced, and suffered continually with pains in the kidney. In June, 1887, had abundant metrorrhœa, and the "flowers" commenced. Dr. Rosset found a uterine tumour, and ordered subcutaneous injections of ergotin. She came to Professor Vulliet in August, and he found a fibroid tumour of the uterus, and told the patient to go home and continue the injections of ergotin, and advised, in addition, daily *séances* of electricity (15 minutes). She returned a month later. The situation, instead of being better, was sensibly worse. The patient suffered from sharp pains in the abdomen, obstinate constipation, and great difficulties in making water; she could not attend to her work. She entered the private clinic of Professor Vulliet. General state good; abdomen projecting. Local condition—voluminous fibroid tumour obstructing the pelvis, pressing on the rectum and bladder, and reaching above the umbilicus. Cervix could not be found; the finger could not be insinuated behind the symphysis to search for the cervix. Retroversion of the uterus very pronounced; reduction was tried in vain, the body would not tilt above the promontory. Vulliet tried, at three different times, to reduce the organ. The fourth day all was prepared for a laparotomy; nevertheless, when the patient was profoundly anæsthetised, the Professor made a last effort in taxis. Pushing above brought about no displacement. Pressing in the other direction was tried; he felt the uterus slip lower down. He then made alternative pressures on the abdomen and per vaginam. The uterus gradually became more movable in both directions, and suddenly it passed the promontory and took its normal position. The tumour was then more prominent; it extended about three fingers' breadth higher than before the reduction; it seemed, in the first place, as if there existed a tumour on both horns of the uterus. The cavity measured 12 centimetres, and had a curved direction, with concavity forwards. Dilatation was practised, introducing first Hegar's small bougies, then with strips of laminaria

cut in form of urethral sounds. These were withdrawn the next day, and replaced by nine large iodoform tampons. At the end of eight days the cavity was well open. Vulliet found, by intra-uterine touch combined with abdominal palpation, an interstitial fiibroid of the posterior wall, and general hypertrophy of the walls. An incision was made in the tissues covering the part where the fibroid was found, then the uterus was tamponed. The prominences felt at the right and left on the fundus diminished in size during the following days; the left horn remained more developed. These projections were attributed to a median furrow due to a long pressure of the promontory on the middle of the extremity of the uterus. The tampons were changed once every two days. At the third dressing, the woman having felt the preceding day some expulsive pains, about 15 grammes of pieces of fibro-muscular tissue came away; and after this, each time the dressing was changed *débris* of the same nature was found. The uterus still remained voluminous, but the tumefaction of the left horn formed the essential part of the abnormal development. Vulliet decided to make a second incision over this local enlargement. Hardly had the knife penetrated into this part when a flood of blackish, slimy blood escaped. The appearance of this blood clearly indicated that it was a product by retention. It was very probably a local hæmatometria, produced by the closing of the uterine walls unexpectedly on account of the compression which was produced when the tumour was imprisoned behind the promontory. Vulliet introduced his fingers and enlarged the opening. The return of this diverticulum to the cavity of the uterus caused a depth of 15 centimetres of the same. Tampons were placed up to this diverticulum, and daily intra-uterine dressings were made for a week (irrigations, tamponing, &c.). Faradisation and ergotin were ordered, and two weeks after the operation the uterus had undergone such an involution that it reached only two fingers' breadth above the symphysis. The patient then returned to her home. I learnt that when there she was in bed for two weeks for a *phlegmasia alba dolens*.

It is evident that a series of manœuvres cannot be performed in the uterus, such as had been accomplished, without exposing the patient to some of the slight complications of labour. The fact of having found a local hæmatometria in the living is rare. Professor Zahn, to whom I mentioned the fact, said that he had sometimes found the phenomenon at the autopsy. This case is doubly interesting—first, the patient demonstrated that *retroflexio uteri fibrosi* is a complication which, so far as surgical interference is concerned, renders the operations more difficult, the more so, if the retroflexion of the gravid uterus compromises gestation and labour.

The reduction of the uterus is the first indication to fulfil, and it may certainly often be accomplished by a persevering and well-combined taxis. On the other hand we were placed face to face with a case which is such as not to admit of a laparotomy—the indication was urgent to intervene. Now, a laparotomy performed under the circumstances was of a nature to change the statistics of operations for fibro-myomata in favourable direction.

Second series: Cases where incision was followed by enucleation, partly forced, partly spontaneous.

Case V.—Miss Sophie P., aged forty-three, unmarried, virgin; has suffered between twenty to thirty years from chloro-anæmia, and had small-pox in 1871. Since the commencement of 1884 her menstruations have been painful and abundant. Two years later intermenstrual loss of blood and a discharge of yellowish-white secretion commenced. Since April, 1886, Miss P. has had fearful pains between the umbilicus and the pubes, extending towards the kidneys, and particularly towards the right hip. Dr. Rolland, of Divonne, found a uterine tumour, and put his patient under a palliative treatment, consisting of sitz baths and astringent injections. He sent her to Professor Vulliet on September 17, 1886. General condition—thin, face pinched, abdomen perfectly round, as in a six months' gestation. Local condition—cervix dilated to the size of a sixpence; inferior segment of uterus globular. The finger introduced into the uterus feels a hard and elastic tumour; the organ reached two fingers' breadth above the umbilicus. Dilatation—intra-uterine examination reveals a fibro-myoma, a conical portion of which projects into the cavity; and another, much more considerable, is found in the superior part of the posterior walls of the organ. In other words, then, the bulk of the tumour is incased in the uterine muscle, and its point projects into the uterus. The patient was etherised for the exploration. Profiting by the circumstances, Professor Vulliet washed out the cavity with a solution of corrosive sublimate at $\frac{1}{1000}$ per cent., and securing the cervix by claw-forceps he split it by two lateral incisions; then sliding a pair of long, curved scissors along two fingers introduced into the uterus he commenced a resection of the tumour at the base of the projecting part; then seizing the top of the new growth by a tenaculum it was drawn down, and the resection was continued until it became circular. By traction the neoplasm came down. The incision was stopped when it was found dangerous to cut higher. Vulliet thought that he could remove about a quarter of the tumour as it was; the rest remained imprisoned in the wall. Instead of trying enucleation, which was difficult and dangerous on account of the situation of the tumour, it was decided to leave the further elimination to spontaneous enucleation. The cavity

was washed out with sublimate, and stuffed with iodoform tampons; the dressings were changed every two days. A discharge was established, resembling such as is seen after a normal labour, with this difference, that in it were found pieces of fibrous tissue. The patient having felt, at different times, expulsive pains, a second examination was made at the end of the month. The greater part of the tumour had entered the uterine cavity. It was drawn outside by forceps, and the attachments which held it back were cut through with scissors, and, after an operation of about half an hour, it was entirely removed. In this case we had to do with a fibro-myoma, partly sub-mucous, partly intra-parietal. The circular incision made around the projecting part of the tumour and the ablation of this part may be considered as a resection. The intra-parietal part, under the influence of expulsive pains, was afterwards pushed into the uterine cavity. It is evident that immediate efforts to enucleate would have failed. By the permanent dilatation, uterine action was produced by the tampons remaining in the organ, which provoked and facilitated the expulsion, at the same time the iodoform cotton assured asepsis and drainage. The patient was seen in December, 1887, and was in perfect health.

Case VI.—February 24, 1877, Professor Vulliet was called, in consultation, to see Mrs. G., aged thirty-six, married fourteen years, and a multipara. For twelve years the patient has suffered from her uterus, her abdomen gradually increasing in size. Having consulted many surgeons, she is made aware that she has a fibroma of the uterus. Since August, 1886, the menstruation—up to that time regular and normal—has completely stopped, and the abdomen has become more swollen. She said that the doctors she had consulted were in doubt as to gestation. During the week before my consultation she had had, at several times, symptoms like those of the commencement of labour. It was under these circumstances that she summoned Dr. W., who called Professor Vulliet into consultation. After a most careful examination, Vulliet made a diagnosis of a gestation, the fœtus dead, and could not be expelled on account of a tumour. The following day a new labour commenced, and a foot was presented at the external orifice. The extraction offered no difficulty, and a fœtus of about five months, dead for some weeks, was found. To effect delivery the introduction of a hand into the uterine cavity was required. Profiting by the circumstance, Vulliet palpated the tumour between his hands, and thus determined its size, consistence, and, above all, its relations with the walls of the uterus. It was a typical interstitial fibroma of the anterior wall. It extended above to the fundus uteri, and below up to the internal orifice; the cervix, strictly speaking, was normal; the convexity of the tumour faced the serous membrane; in the mucous membrane there was no marked projection; the neoplasm

was hard and resistant, and not elastic, being the size of a large orange. Upon this ground the patient declared that she had decided, for some time past, to undergo a radical operation, and decided to have it performed as soon as she recovered from the abortion. The size and abdominal development of the tumour showed that an attempt to perform a total extirpation could be obtained only by laparo-hysterectomy; but Professor Vulliet, profiting by the physiological dilatation caused by the gestation, thought his method might be employed after artificial dilatation had been practised. He explained his plan to Dr. W. and myself. It consisted in observing the patient for two days, so as to eliminate all pre-existing infection; then to tampon the uterus to see how this organ would behave in regard to a "tamponnement à demeure" *post-partum*; and lastly, if no fever or intolerance appeared, to perform a resection of the tumour. Without putting aside the accidents which might ensue, Professor Vulliet thought that the dangers would not be greater than those accompanying laparo-hysterectomy. No pyrexia having been found, and the tamponing being perfectly well supported, the operation was performed five days after the abortion. The hand was easily introduced into the uterus, freed from the tampons, and washed out with a solution of sublimate ($\frac{1}{1000}$). Seizing, with the other hand, a button-pointed bistoury, with a hidden blade, it was slipped along the fingers of the other hand into the cavity of the uterus; a long and deep incision could then be easily made. The hæmorrhage was of no importance; in consequence the cavity was again plugged at once, and the tampons were changed every second day. The sixth day after the incision Vulliet was again suddenly called to see the patient, who was again in labour. By touch, he discovered a round, flat disc in the vagina, which had been spontaneously expelled from the uterus; he then felt the remaining tumour projecting into the cavity through the gaping of the incision. I administered the ether, and Vulliet proceeded to the extirpation of the intra-uterine portion of the tumour. The cavity was again washed out with sublimate, and completely plugged with iodoform tampons. At three different times, at intervals of six and five days, the patient had expulsive pains, and, with each, pieces were expelled from the incision; they were immediately removed by traction and by section. March 23, the patient was completely delivered of this tumour, which she had carried for twelve years. The uterus was large on account of the modifications in its structure, caused by the tumour as well as by gestation. Two months later the patient possessed a normal uterus, fit for conception and gestation. We have often seen her since, and she never was better in her life.

Case VII.—Mrs. S. B., aged forty-six, married, a confinement in 1871, has had menstruation three times at the commencement of gestation, an

abortion at six weeks in 1881. She dates her trouble from 1879. At this time she experienced a malaise in the entire uterus, and had vomiting as if pregnant. Menstruation was before this irregular, became, during the last seven years, so abundant that it stops only for a few days; constant dysmenorrhœa, severe pains in the kidneys and abdomen, troubles in micturition, yellowish-white discharge. In 1884 Mrs. B. came to Geneva to consult Dr. D. Professor Vulliet, who was by chance at this gentleman's house, removed a polypus, as large as a small mandarin, from below the inferior segment of the uterus and lodged in the vagina. This operation relieved the patient, but soon after bloody discharges appeared again. She was then advised to leave off her occupations, and was put under treatment by ergotin. During the winter the discharge was considerably diminished and the suffering less, but all commenced again in the spring, when Mrs. B. began once more to work. She was sent to Professor Vulliet, in January, 1887. The uterus was as large as at a four months' gestation, but perfectly regular in form. Four *séances* of dilatation by tampons were sufficient to enable us to see 5 or 6 centimetres deep into the cavity, aided by an intra-uterine speculum. Nothing was seen except an intense inflammation of the mucous membrane. By examination with two fingers and by lowering the organ a tumour was distinctly felt, having the dimensions of an orange. It formed a slight vault in the cavity, but considerably more so in the abdomen, in the region of the right horn. Incision $2\frac{1}{2}$ centimetres deep; abundant hæmorrhage, but lasting a short time. The finger, inserted immediately into the incision, felt a tissue which could deceive nobody; it was the fibroma itself that had been cut. Irrigation with corrosive sublimate; tamponing; ergotin; electricity. After the second day labour pains announced the expulsion; the third day intra-uterine examination having shown fibrous masses in the uterus, the patient was put under ether. These masses were seized and excised with scissors; about 40 to 50 grammes of tissue were removed. Some *débris* existed in the gap of the opening. Continuation of tamponing and treatment. Labour again began in three days. The patient is etherised. By the touch, the remains are found forming a hard tumour very intimately united with the uterine wall. Vulliet, with a pair of strong forceps, armed on the inside of their blades with sharp points, seized the fibrous masses and by a movement of rotation was able easily to enucleate them; he removed this time 50 to 60 grammes of fibrous tissue. Intra-uterine touch, combined with abdominal palpation, showed that the uterus was completely freed of all new growth. This patient was a woman who had already had a fibroma removed, it was consequently just to suppose that there still might exist others, but the uterine walls were of normal consistence and everywhere homogeneous, so that nothing appeared suspicious. It is probable that, when several fibrous nuclei exist, the great development of

one prevents the development of the others; but if spontaneous elimination or an ablation takes place, thus removing the tumour, the others may grow and produce the same train of symptoms. Vulliet considered this fibro-myoma as intra-parietal, having two poles—one sub-mucous, the other sub-serous. The muscular tissue must have been very thin, but had not lost its contractility; spontaneous elimination was a proof of this fact. January 23, we saw the patient, who was exceedingly well; menstruation was normal, a fact which, the patient said, had never before occurred in her life.

Case VIII.—Mrs. L. M., aged fifty, married; six normal deliveries, one abortion with good termination. Very abundant menstruation, regular until November 3, 1887. Very little whites. For about three years has had pains in the kidneys, feeling of weight in abdomen, troubles of the bladder and rectum. November 3, 1887, patient was suddenly taken with hæmorrhage when getting up. Since then, has had bloody discharge, which stops only for a short time; the commencement of each hæmorrhage is announced by pains in the abdomen. Dr. B. having recognised the presence of a uterine tumour, called Professor Vulliet in consultation on April 5. An operation was decided on, and the patient entered Professor Vulliet's private clinic on April 8. General condition—tall, well built, thin, with marked anæmia; patient states that she weighed 97 kilos. in October, 1887; she has sensibly diminished in weight. April 9, Vulliet had the first *séance* of dilatation by tampons, a second was made the 10th, a third the 11th. On the next day, the uterus was open enough to allow of the introduction of four fingers into the cavity of the organ. Local condition—by abdominal palpation a fibrous tumour is felt, encased in the anterior wall; it projects into both abdominal and uterine cavities, especially at its inferior part; the posterior wall of the uterus is thin. Diagnosis—fibrous tumour of the uterus. The operation took place April 12. Vulliet commenced by withdrawing about 30 tampons from the uterine cavity; an irrigation of 5 litres of corrosive sublimate ($\frac{1}{1000}$) was then made; the vulvæ were held apart, and the uterus was drawn down; a "boutonnière" was then made with scissors in the uterine mucous membrane; it was then opened up 6 to 7 centimetres, and the neoplasm was thus brought into view. The finger was then introduced so as to perform enucleation, which was remarkably easy on the entire periphery. As the uterus was hard to draw down, the finger could not reach the upper limits of the tumour to accomplish the enucleation, so it was decided to amputate with scissors as high up as possible, when the cavity, resulting from this operation, could be stuffed with tampons. This amputation was difficult, and brought away the lower part of the tumour weighing about 200 grammes. The two following days the tampons were renewed after irrigation. On the third day

there was a slight rise in the temperature, and it was feared that the remaining portion had been infected, so Vulliet removed from the surface about 50 grammes of tissue which presented no signs of decomposition. On the eighth day after the operation, having noticed that the tumour had considerably descended, Vulliet decided to end the extirpation, which, thanks to the spontaneous enucleation produced since the last *séance*, was very easy, for the finger reached the superior limits. This portion weighed 270 grammes. Mrs. M. was well at the end of eight days without accidents.

We have here another example of a tumour for which, on account of its size and situation, laparotomy was indicated, and which was extirpated by the natural passages without mutilating the uterus.

(*To be continued.*)

ART. V.—*Some Practical Considerations on the Anatomy of the Mastoid Region, with Guides for Operating.*[a] By AMBROSE BIRMINGHAM, M.B., Professor of Anatomy, Catholic University, Ireland.

I NEED not remind anyone of the wonderful advance made within recent years in brain localisation, or of the concomitant advance in brain topography and brain surgery. The improved localisation seems to have stimulated cerebral surgery, and to have brought new fields within the reach of the operating knife. On the other hand, the avidity with which the surgeon utilised the knowledge furnished in localisation and topography, has urged the physiologist and anatomist to further work in their spheres. Thus there has been a mutual stimulation, beneficial to the cause of surgery, of physiology, and of anatomy alike.

The condition which most frequently calls for operation on the brain is, I believe, abscess; and while it is a desirable thing to help in any way to remove this disease and its effects by operation, it is equally desirable to prevent its occurrence, if possible, by early treatment of the source or cause of most brain abscesses. For this reason the treatment of suppurative diseases of the middle ear (and particularly the radical treatment) has of late come into well-deserved prominence.

It will, I think, be admitted that the most fertile cause of brain abscess is suppurative disease of the middle ear. If this be so,

[a] Read before the Section of Anatomy and Physiology, Royal Academy of Medicine in Ireland, on Friday, January 9, 1891. [For the discussion on this paper see p. 166.]

surely it is wise to try by every means to cut short the course of, and, if possible, to eradicate, the disease of the ear, before it can set up intracranial mischief. The most generally adopted radical treatment of this condition seems to be free drainage of the tympanum. This is usually effected by opening into the mastoid cells and antrum, which communicate so freely with the tympanic cavity, so that trephining or tapping the antrum is now a well-recognised operation, which has been attended with satisfactory results. Unfortunately, in a certain number of cases difficulties and dangers of a most serious nature arise in the operation, due chiefly to the complicated and varying anatomical relations of the part. The surgeon must approach an operation on the antrum with a certain amount of diffidence, for its intricate anatomy does not seem to have been thoroughly worked out—at least from the point of view of the operating surgeon.

In the hope of helping, even in a slight way, to elucidate the topography of the region, and of giving the operator more fixed data for working upon, I undertook an examination of the part early in 1890. With this object I collected and examined one hundred specimens. I communicated a preliminary report upon the matter to the Academy towards the end of last session; a full account of the investigation was read before the British Medical Association last year, and it will appear in the Transactions of the Academy for 1889–90. Since then I have studied the results of my examination, and have made some practical deductions, which I wish to place briefly before the Academy in this paper.

To make what follows more intelligible I may refer briefly to a few points in the anatomy of the region. The base of the pyramidal, petrous portion, of the temporal is applied to the inner surface of the conjoint mastoid and squamous portions of the bone. Below and in front, where the mastoid and squamous segments separate, is situated the external auditory meatus, which runs inwards and a little forwards towards the base of the petrous. At the bottom of the meatus is the tympanum or middle ear, separated by the membrana. From the upper and posterior portion of the tympanum (its attic) there runs backwards in the substance of the petrous the antrum mastoideum—a cavity which will usually contain a good-sized pea. Into it open the mastoid pneumatic cells, and it itself communicates freely with the upper part of the tympanum. The upper surface of the petrous forms part of the floor of the middle cranial fossa. Owing to the fact that the petrous

may be applied to the squamous higher up or lower down than usual, the floor of the cranial cavity here may sometimes be a considerable distance above the upper margin of the bony meatus, while in other cases it is barely above the level of this margin. In perforating behind the meatus we must take care that we do not enter the cranial cavity in a case where the petrous lies lower than usual. Again the lateral sinus runs downwards behind the ear in the angle between the back of the petrous and the inner surface of the mastoid; as will be shown later, the sinus comes forward in different skulls to a varying extent; sometimes it comes quite close to the meatus. Means must be found of avoiding the sinus in such cases. As to the point on the surface corresponding to the antrum internally, if the meatus runs inwards and a little forwards to the tympanum, and if the antrum runs backwards from the upper and posterior part of the tympanum, naturally a point immediately behind the meatus, and below the level of its upper border, ought to mark on the surface the position of the antrum. Such is always the case. Most measurements have been taken either from the bony meatus—its centre or margins, or from Reid's base line—viz., a line drawn backwards from the lower margin of the bony orbit through the middle of the meatus; posteriorly this line usually lies at the occipital protuberance, or immediately under it. It may be added that when working with *portions* of skulls, the upper margin of the zygoma may be considered practically horizontal in the normal position; this has been found a useful guide.

1. The first conclusion I have drawn is that the lateral sinus varies to an extreme degree in position and in shape. The surface markings usually given for mapping out its course are occasionally as much as an inch astray, and this at a point where there is danger of wounding the sinus in the operation of trephining for abscess, &c., of the temporo-sphenoidal lobe of the brain.

2. The following is the average condition of the sinus:—Beginning near the occipital protuberance, it ascends gradually, running forwards and upwards in close relation to the superior curved line for a short distance; leaving the curved line, it continues to arch upwards until it reaches a height of nearly $\frac{3}{4}$ of an inch above Reid's base line; soon after it has reached this level the sinus bends gradually or sharply and runs downwards and forwards on the mastoid portion of the temporal, immediately in front of a ridge which prolongs the posterior margin of the mastoid process

upwards and backwards, and in front of the posterior margin of the process itself. Here it lies about $\frac{1}{2}$ inch behind the meatus; having reached the level of $\frac{1}{4}$ or $\frac{1}{6}$ of an inch below the floor of the meatus, it turns in to the base of the skull. The bend of the sinus, where it begins to arch downwards, is most commonly at a point $1\frac{1}{2}$ inches behind and $\frac{3}{4}$ inch above the centre of the bony meatus.

3. As a guide for avoiding the sinus in operations upon the cerebrum or cerebellum, I would suggest the following method for mapping out the limits within which it may wander:—One line should be drawn convex upwards from a point $\frac{1}{2}$ an inch above the occipital protuberance to a point $1\frac{1}{2}$ inches behind and $1\frac{1}{4}$ inches above the centre of the meatus, another line from $\frac{1}{2}$ inch below the occipital protuberance to the base line $1\frac{1}{2}$ inches behind the meatus. Between these two lines the sinus will be found; above or below the space included between them trephining may be practised with safety.

4. I have also tried to arrive at some point at which the sinus might always be sought for with success; this is required in the operation for septic thrombosis of the sinus. Although it varies so much in its course generally, at one spot it is pretty constant in its relation to the middle of the meatus. If the pin of a $\frac{3}{4}$ inch trephine be placed at a point $1\frac{1}{8}$ inches behind the centre of the bony meatus, and on the level of its upper border, it will expose the sinus, I believe, in every case.

5. It has been the experience, at least, of some Dublin surgeons, that the site proposed by Mr. Barker for trephining in temporo-sphenoidal abscess—viz., $1\frac{1}{4}$ inches behind and above the centre of the meatus—occasionally brings the trephine down on the upper part of the bend of the lateral sinus. From an examination of my specimens I have come to the conclusion that the safest site for trephining over the temporo-sphenoidal lobe of the brain is such that the pin of the trephine shall be at a point $1\frac{1}{4}$ behind and $1\frac{3}{4}$, or better still, 2 inches above the centre of the bony meatus.

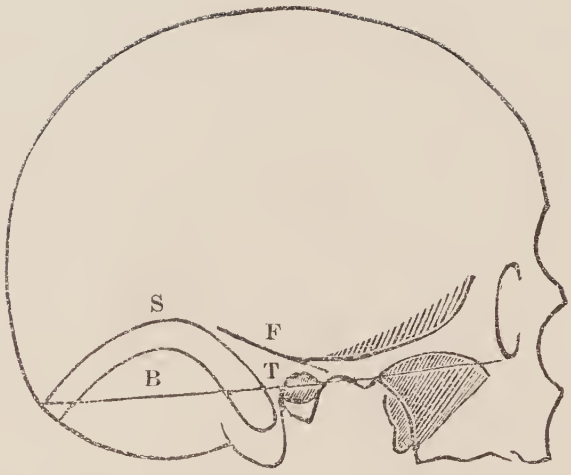
6. In trephining over the cerebellum I would recommend that the pin of the trephine should be placed 1 inch below Reid's base line and 2 inches behind the centre of the meatus. This differs from the site proposed by Mr. Barker—$1\frac{1}{2}$ inches behind the centre of the meatus and 1 inch below the base line. I have found skulls in which the occipital artery would be wounded by a $\frac{3}{4}$-inch trephine placed as directed by Mr. Barker.

7. In all cases great care should be taken in boring the skull behind the ear, on account of the dangerous variations in the position of the lateral sinus; it is occasionally as little as $\frac{1}{12}$ of an inch from the surface; in other cases it comes within $\frac{3}{16}$—less than a quarter of an inch of the back of the meatus.

8. With reference to tapping the antrum—after a careful examination of all my specimens, I have come to the conclusion that the mastoid antrum may be opened in every case, without wounding the sinus, and without opening the cranial cavity, if a $\frac{1}{4}$-inch drill be used, and sent straight inwards (without inclination backwards or forwards, upwards or downwards) at such a point that the hole it makes shall lie as near as possible to the back of the bony meatus, and its upper border not more than $\frac{1}{12}$ of an inch above the level of a line prolonged backwards from the superior margin of the meatus. The instrument should not be driven in further than $\frac{3}{4}$ of an inch at the most; if it be sent further than this distance there will be a danger—indeed, in a certain proportion of cases, almost a certainty of wounding the most external part of the labyrinth—viz., the external semicircular canal, which is in some cases not more than 17 mm. from the surface. The antrum will usually be reached at a depth of $\frac{3}{5}$ of an inch. In about 98 per cent. of cases a $\frac{1}{3}$-inch drill might be used, and in a large proportion even a $\frac{1}{2}$-inch instrument; but since it is impossible to tell from the exterior the dangerous cases, the $\frac{1}{4}$-inch size should be used to secure safety in every case. The aperture may be subsequently enlarged with care, if this be thought necessary.

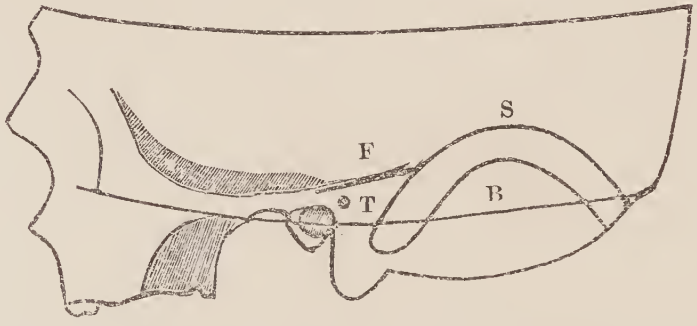
9. The attempt to open the antrum and the cranial cavity by one perforation, as proposed by Mr. Wheeler, will not always succeed. For if the trephine be placed in front of a vertical line passing through the most prominent part of the mastoid process, with its lower margin on the level of the upper border of the meatus, it will be found that the roof of the antrum is occasionally so low (as a consequence of the low level of the petrous portion of the temporal bone) that the trephine opening lies above the level of the antrum. From my experience I cannot recommend this method as a reliable means of reaching the antrum. If a $\frac{3}{4}$- or $\frac{1}{2}$-inch trephine be used, there must be great danger of wounding the lateral sinus, unless it be applied entirely above the level of the antrum. Under all circumstances it appears to me that a trephine—unless it be extremely small—is an objectionable instrument for tapping the antrum.

Fig. 1.



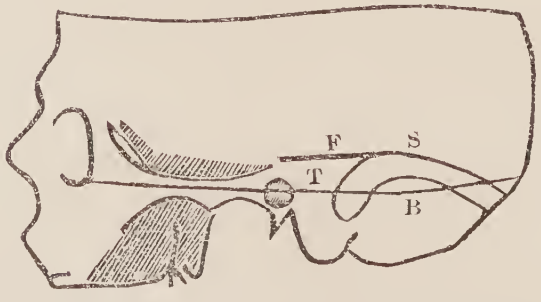
S, lateral sinus; B, Reid's base line; F, level of floor of middle fossa of skull; T, triangle in which drill-hole may be made. It is small in this case; the sinus arches up very high, and comes far forward. Observe marked curve of sinus and its relation to base line. (From a photo.)

Fig. 2.



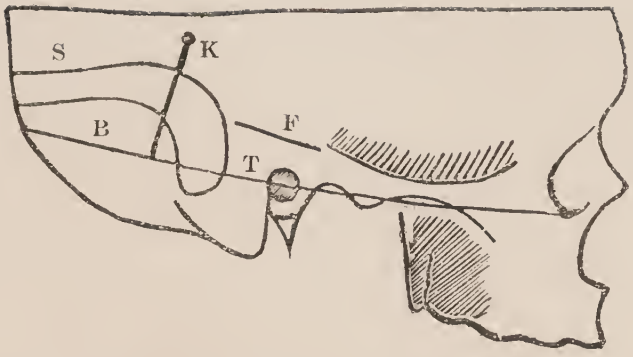
S, lateral sinus; B, Reid's base line; F, floor of middle fossa; T, triangle for drill-hole. The triangle is large in this case; lateral sinus considerable distance from meatus; F is rather low. Observe relation of sinus to base line. The round mark in front of T is the point corresponding to the antrum. (From a photo.)

Fig. 3.



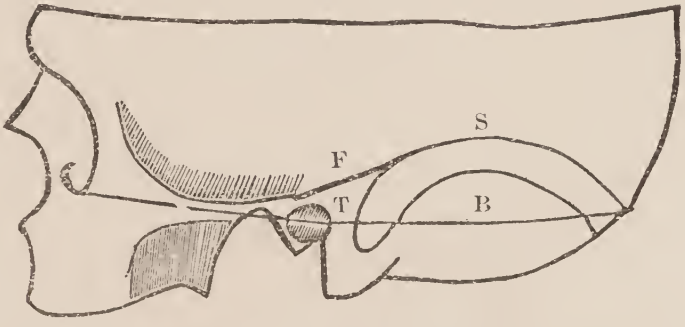
S, lateral sinus; B, Reid's base line; F, floor of middle fossa; T, triangle for drill-hole; triangle large. This is the only case in which the lateral sinus lies near the base line. (From a photo.)

Fig. 4.



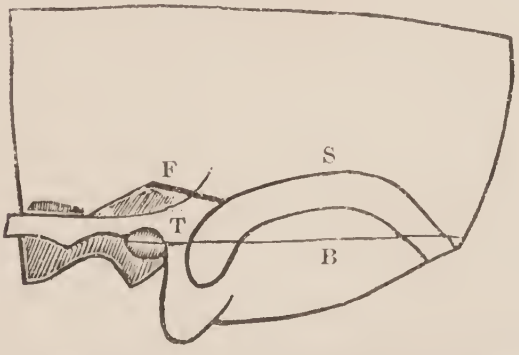
S, lateral sinus ; B, Reid's base line ; F, floor of middle fossa ; T, triangle for drill-hole ; K, site proposed by Mr. Baker for trephining in temporo-sphenoidal abscess. Observe the proximity of the lateral sinus in this case to the site. Here the lateral sinus lies high above base line posteriorly, and it is enlarged where it bends down on the mastoid. (From a photo.)

Fig. 5.



S, sinus ; B, base line ; F, floor of middle fossa ; T, triangle for drill-hole. Here the sinus is rather near the meatus, and F is low. (From a photo.)

Fig. 6.



S, sinus ; B, base line ; F, floor of middle fossa ; T, triangle for drill-hole. In this case the sinus presents abrupt bends instead of gentle curves, and it approaches near to the base line and near to the meatus. (From a photo.)

10. Finally, I would suggest a simple rule for avoiding the lateral sinus in this region—viz., that all deep perforations made here should be in front of a vertical line drawn $\frac{1}{4}$-inch behind the posterior margin of the meatus; and that they should be made with the greatest care. I have specially avoided giving any guides or surface marks except bony points on the skull itself, about which there can be no doubt or uncertainty. The soft parts, such as the various divisions of the ear, &c., are too movable and too variable; they should never be adopted as reliable guides in such a critical corner with such important relations. I believe that in tapping the antrum the posterior and upper margin of the bony meatus ought always to be freely exposed, and all bearings taken with the greatest care from the meatus. The directions which I have suggested for reaching the antrum can be easily followed if the margins of the meatus be thus exposed.

I might point out, in passing, that the lateral sinus runs down on the mastoid, roughly, about opposite the line of reflection of the skin from the pinna on to the head posteriorly. I merely mention this because sometimes there is an idea held that the sinus lies a considerable distance behind this line.

These are the chief practical points which have occurred to me in connection with the topography of the region. I have said nothing about skin incisions, or about any of the earlier structures met with in operations on these parts; they are more properly the care of the surgeon.

ART. VI.—*How they went up Nile. From Gemai to Korti*, 1884. By BRIGADE-SURGEON ALBERT A. GORE, M.D., Army Medical Staff.

[*Continued from page 16.*]

Kirbekan, February 10th.

8th.—Left Castle Camp, Colonel Butler taking command of the whole of the advanced guard. 9th.—Came in sight of the enemy at Kirbekan. Bivouacked a short mile from their position. 10th.—Colonel Butler leading the attacking column, the Staffords in red and the Black Watch in kilts, marching in line of half battalions, the company stretcher bearers with stretchers following their own companies, quickly advanced; a detachment of the field hospital, with 3 camels carrying surgical and hospital equipment, paraded with the infantry, 2 camels carrying water for the

wounded, and the reserve ammunition camels marching between the Staffords and Black Watch. During the action, in which the enemy were defeated, leaving 200 dead on the ridge, the wounded were collected in groups by the stretcher detachments and a dressing station was established at successive points as the troops advanced. Restoratives administered. Owing to the nature of the ground the medical officers and wounded had been frequently exposed to a heavy cross fire. As soon as the action was over additional men were told off as stretcher bearers, and the wounded were brought into camp, and were afterwards carried in the boats with the column as it proceeded up river, generally doing well. Three officers and 9 men were killed and 44 wounded. General Brackenbury wrote of this column:—"A month out of Hamdab of unprecedented exertion in the open air, rowing against the swiftest water, unprecedented among any troops in a campaign, the physical condition of the men was magnificent; a life of incessant toil, in ragged clothing, never changed, scarred and blistered by the sun, and rough work performed with constant cheerfulness and unceasing energy and admirable discipline. There was no more gallant or trustworthy body of men." Starting from Korti December 28th, 1884, the column arrived at Huella, 25 miles from Abu Hamed, February 23rd, 1885, and again reached its base 3rd March. At Huella had had only 18 sick, or 6·4 per 1,000.

The diseases which caused the largest number of admissions amongst the non-commissioned officers and men were:—Simple continued fever, 18; dysentery, 7; enteritis, 3; febricula, 2; enteric fever, 2. Of the 3 deaths 2 occurred from dysentery and 1 from enteritis. Admissions from disease, 69; wounds received in action, 45; total, 114. Officers:—Disease, 12; wounds, 4; total, 16. Deaths:—From disease, 3; drowning, 5; wounds, 3; killed in action, 7; total, 18. Officers:—Died from disease, 1; killed in action, 3; total, 4.

Some Practical Lessons of the Campaigns (*Different Officers.*)

An army in the field should always be accompanied by a large and well-organised sanitary or conservancy corps.

With the Principal Medical Officer should be an experienced officer upon whom should rest the responsibility of furnishing all the land transport, the supply and equipment of hospitals, and he should be empowered to purchase locally whatever the Principal

Medical Officer considered necessary for the well-being of the sick and wounded.

The general impression among medical officers that men who get to the front will obtain all the rewards, and that those that remain in the useful but less brilliant positions along the line of communications will be neglected, is injurious to the public service, and the interests of good officers should not suffer because they have been selected for useful and responsible rather than showy positions.

The drip-stone filter, of native manufacture, was largely employed, and answered admirably when properly attended to and washed out daily.

Litters are useless unless carried by specially trained mules. For cavalry, cacolets on mules are a mistake, as the mules cannot keep pace with the cavalry. Cacolets for cavalry should be on horses, those used for the band being trained in time of peace to carry them.

The grey serge clothing supplied to the troops in the earlier campaigns appeared to be more suitable for the bivouac than khahee.

The worst cases were best carried across the Bayuda desert on stretchers, with Soudanese soldiers as bearers. Cacolets on camels answered admirably, but litters did not come up to what was expected from them. The chief drawback to the sick was the intense heat. The purity of the desert air aided greatly in procuring the rapid healing of wounds. Patients' health improved quickly on removal from the camping ground in the desert, which soon became fouled.

The amount of invaliding was large during the Nile campaign—58·49 per cent. of strength. Chief causes—fevers, bowel affections, general debility, and wounds in action.

The regulation field dressing was more effective where a little iodoform was added, and a layer of boracic wool placed over all.

To attend to men in dhoolies, and see them supplied with water, milk, and beef-tea, as required during a dusty march in a tropical country, is one of the most important duties of the Medical Staff Corps, the actual carrying of the sick being done by natives.

Maltese carts are lighter and equally useful as "tip carts," but require more careful packing.

A bearer company before taking the field should be exercised with its equipments at home, and embark in its entirety fit for

work. A great advantage would result if all the non-commissioned officers and men were chosen from one district. Various articles of spare equipment should be carried. More than 8 surgical haversacks for a company are required. The transport staff should embark with the company completely equipped, with all its equipment in the same vessel, and not be detached from it. Divisional boxes should be light. Half a load for a mule, or one box, should contain all that is required for a detachment.

Tents, single circular, are unfitted for the climate, and had to be changed for European privates' tents, Indian pattern, when the heat increased.

Lascar pals are too hot for a mid-day sun as the heat increases; double flies are necessary. The best form of tent and most suitable for field service in any climate is the ridge pole, double fly, of a shape similar to those known as the "Cabul pattern," made to hold 2, 4, or 6 wounded, or double that number of men in health, opening at either end to insure thorough ventilation. They are always the coolest. The Indian double fly pal, mountain battery, weighs $1\frac{1}{4}$ maunds, superficies 96 feet; accommodates 2 sick on stretchers comfortably. Double Lascar pal weighs $3\frac{1}{2}$ maunds, superficies 252 feet; accommodates 8 sick comfortably. E. P. tents—weight 10 maunds, 320 superficial feet; most suitable for standing camps; accommodates 8 sick comfortably, on wicker bedsteads, or bedsteads and trestles; 8 hospital beds crowd it too much when there are bedside tables in addition; the bedsteads are too wide. The Lascar pal is useful, portable, and readily pitched. Joining the walls of Indian pattern tents, so as to form a flat roof, and then raising this on poles, 8 or 9 feet from the ground, afforded the best protection from the sun.

Fairly comfortable beds—4 at a side, 8 in a tent—can be made from large forage-bags, partly filled with tibbin, suleetahs underneath, separating them from the earth or sand.

In the desert at night blankets and great coats are necessary, and a shelter to windward from the keen north wind. The sick and wounded feel the cold much.

Packing cases should be of the size of medical panniers, of wicker with a good tin lining, means for easily strapping on to mules or camels, have strong rope handles, locks and hinges.

Each surgeon on field service should have readily available several artery forceps, Sir Spencer Wells' pattern, for controlling hæmorrhage.

The absence of spirituous liquors largely contributed to the efficiency of the troops during the arduous duties performed by them.

In warfare with barbarian or semi-barbarian tribes, the medical staff ought to carry a large-bore revolver—the short sword is an inadequate protection.

Condensed water, from 2 to 3 gallons daily, was not disagreeable when filtered through charcoal; no kind of disease could be traced to it. When men have little to do and are exposed to a fierce sun, a large meat ration is unnecessary. Lime-juice should always be issued to natives serving in the field.

Two camels are required to carry an E. P. tent complete; a mule can carry easily a double fly pal, mountain battery—average weight, 130 lbs.

A camel bearer company for desert work is best arranged as follows—viz., into 2 half companies, each sub-divisible into 2 sections—1 medical officer to each section, 1 quartermaster, combining the duties of paymaster, for the whole; 1 staff sergeant to each half company. To each section 1 sergeant, 2 corporals, 17 privates, including cook, batman, and 3 spare privates. Interpreter, 1 to each half company, and a saddler; camel-drivers, 1 to every 3 pack animals; equipment litters, 6 per section; cacolets, 19 do.; divisional boxes, 1 set do.; field-panniers, 1 pair do.; surgical reserve panniers, 1 pair do.; cooking-pots, 1 nest do.; water-tanks, 8 do.; bearers, 12; tents, operating, 1 to each half company; dressing haversacks and water-bottles, 1 to every other man. Riding camels—officers, 5; staff sergeants, 2; sergeants, 4; interpreters, 2; privates, if operating with mounted troops or on convoy, 1 each. Special camels—100 for sick; 10 spare. Packs for equipment, baggage, men's kits, water, &c., 50; spare, 5 per cent. Rations, water, fire-wood, patients' kits, and forage to be carried by transport department.

In the event of an action on a large scale, and in a situation not accessible for camels, stretchers and men require to be supplemented—the former from the field hospitals, the latter from regiments. Camels for carriage of sick and wounded should be specially selected for their strength, and be trained for that purpose, and should not be used for any other work. Total camel-bearer company—5 officers, 2 staff sergeants, 4 sergeants, 8 corporals, 82 privates, 4 batmen, 2 interpreters, 2 saddlers, 60 drivers. Equipment—litters, 6 pairs; cacolets, 19 pairs per section; 4 sets of divisional boxes, 8 pairs of panniers, 4 sets of cooking

utensils, 32 water-tanks; camel—32 stretchers, 48 bearers, 2 tents, operating, 12 dressing haversacks, 12 water-bottles.

In boat expeditions which have to proceed a long distance, and the sick cannot be regularly evacuated, the field hospital equipment must be reduced to a minimum and re-arranged, if whale-boats are employed, into 8 sections, each so far complete in itself so that it might be detached as required, and contain all essentials for a small field hospital stowed in its own whaler—the excess carried with head-quarters—a proportion of medical comforts being divided amongst the sections. Brandy, as giving greater value for the space occupied, should be substituted for port wine. Four or five of the Medical Staff Corps in each boat, supplemented by a coxswain, bowman, and rowers from regiments. A medical officer in each boat, with a pair of field-panniers, surgical bag, field companion, haversacks, antiseptic dressings, &c. A diet-sheet, accurately filled in, the only voucher to be required for admission and supplies from a mobile, river-column field hospital. Boat-tents answered for the sick, and being lighter were easily carried.

When the Nile was clear and in the upper reaches filters were unnecessary in boats, as the water from midstream was sufficiently pure and clear, cool and palatable. A lump of alum in a boat would be more useful than a filter.

The bacon did not keep well, much became bad. Some of the cheese was very good; navy biscuits were very good. Cabin biscuits became bad in large quantities; jam was much relished. The tea was of excellent quality; preserved vegetables were not considered of much value. The oatmeal was very good; rice, sugar, and tea, packed in bags, was much injured by water. The supply of medical comforts was well selected, but the boxes were not sufficiently secured.

On river encampments native troops should not be encamped above European infantry; water should not be drawn for drinking or cooking from the bend of a river where fouled by natives. Troops should be encamped above a town to insure a purer water supply. Filled-in latrines should always be marked by a mound of earth; should be at least 100 yards from tents. Water should be taken from midstream, or as near to as practicable.

Well-built huts were found much cooler than the tents, and more comfortable. In the summer, camps in straw huts—dimensions, 40′ × 15′ × 8′, with native bedsteads, each to accommodate 4 men—were very comfortable.

The rations for the Transport and south of Assouan, viz.—1¼ lb. fresh meat, or 1 lb. preserved; 1¼ lb. bread, or 1 lb. biscuit; ⅓ oz. tea, ½ oz. salt, ⅓ oz. coffee, ⅓ oz. pepper, 2½ oz. sugar; 1 lb. of fresh vegetables, or 1 oz. of compressed, or 1 tin of Erbswurst; $\frac{1}{320}$ gallon of lime-juice, with ¼ oz. sugar, preserved health, with occasional increase of lime-juice when required to ¾ or 1 oz.; but there was a deficiency of fat for culinary purposes. Mincers should be supplied where tough meat only can be obtained.

There were no fresh potatoes obtainable above Sarras; the vegetables consisted chiefly of pumpkins and onions. The mutton obtainable was of fairly good quality, but the beef was poor, hard, and tough, destitute of fat, and deficient in nourishment. At some camps the hand-ground flour, obtainable from the natives, was of inferior description, and from the mode of grinding contained a large admixture of sand and grit. The bread baked from it was heavy and sodden.

There should be always a large reserve of lime-juice, and it should form a portion of the daily ration of the troops, and the taking of it should not be optional with the men, and they should be seen to consume it. The lime-juice issued was of good quality, and on analysis yielded the most satisfactory results.

There was a wide difference in the relative value of the preserved meats issued. The Australian and New Zealand were highly appreciated by the men, and looked upon as far superior to any fresh obtainable, but they soon tired of the others on account of their containing such an amount of salt, which excited an undue thirst. They were consequently not used on desert marches while the water supply was limited. The cases should be covered over and protected from the sun. A spirit ration was so rarely given that it was practically unknown.

The Nile boat and field service filters were very valuable, rapid in their action, efficacious, simple in construction, and easily cleaned; where they were fresh filtered water could always be obtained. As there was a great sameness in the food, the occasional issue of cocoa and milk, jams, marmalade, pickles, vinegar, oatmeal, and rice proved advantageous up Nile.

The hot weather commenced on April 1st, and terminated at the end of September. During December, January, and February up Nile the climate was very cool and pleasant, but a considerable increase of temperature took place in March and April. The highest temperature in the shade during the whole period was 120° at Tani

camp on the 27th of March, and the lowest in the shade was 41° on the 22nd and 23rd of December at Akasheh and Sarkamatto respectively. The lowest monthly mean minimum was 48·9° in February, and the highest monthly mean maximum was 106° in May, and the lowest monthly mean range 24° in January. February was the coldest month, and May the hottest. The mornings, evenings, and nights were always cool and pleasant, and refreshing sleep could be obtained. The greatest heat during the day was shortly after noon, and the greatest cold immediately before dawn. The N. and N.E. wind which prevailed during the greater part of the year cooled the atmosphere, and modified the climate, and rendered it agreeable. The hot S. Khamsir was during 1885 very slight; it first appeared at the end of March—26th, 27th, 31st; 12th, 13th, 18th, 19th, 20th, 21st, 25th, 26th of April; 17th, 18th, 19th, 22nd, 23rd of May. It lasted from one to four days at a time. Whilst it continued there was a marked rise in the temperature, and the wind was felt hot and scorching. Rain fell only on May 22nd, a slight shower lasting about five minutes, and accompanied by thunder and lightning. The climate was generally healthy, its principal characteristics being its extreme dryness and the high daily range of temperature. On account of its dryness it was less enervating than that of most countries with corresponding high temperature, and the daily changes were less felt. The variations which took place during the twenty-four hours were liable to produce in delicate constitutions diarrhœa, dysentery, and visceral congestions, but with ordinary care and prudence these affections could be easily guarded against. The only disease peculiar to the country was ophthalmia, which was caused mainly by impalpable dust with which the atmosphere was generally loaded.

The first two regiments sent up Nile from Cairo took with them hospital equipment for 80 beds. Shelter huts and hospital huts were constructed at Assiout and Keneh. A stretcher per company was carried by each regiment. Field hospitals should admit of sufficient sub-divison to meet the exigency and ever-varying demands of war, should be organised in as many sections as there are medical officers, and each of these further divisible into sub-sections, so that each would be in a position to move at a moment's notice with a light or intermediate equipment. The weight of each separate batch should be recorded. The camels for the movable field hospital should be in charge of the medical officers, always available and strong, to avoid delay in moving. To be fed and attended by a section of Army Service Corps attached.

The camel bearer company for 200 sick, divisible into four sections, for the first time regularly organised in connection with the military operations of war with a British army, acquitted itself admirably.

As compared with the mule, the camel has some disadvantages for such transport. His mode of progression is not as easy or comfortable for sick or wounded men, and the fore and aft movement communicated to a pair of litters is not desirable for serious cases. In patients able to sit on a cacolet, the camel was all that could be desired.

The camels of the bearer company were placed completely under the orders of the medical officers of the company, who attended to their food, and saw that the native drivers were paid and properly treated, and naturally took much interest in the well-being and condition of the animals of their company. The result was that they lasted longer, and when others were knocked up, were able to carry on the sick and weakly men unable to march.

Five hundred boxes made at Cairo, of the following dimensions:—length, 28 inches; breadth, 12 inches; height, 14 inches; a red line of paint 2 inches wide surrounding the box on each side, so that no matter what its position was, its nature could be seen at a glance, weighing about 80 lbs. when full, with rope handles to facilitate transport over portages and cataracts, answered admirably, and served for the medical and surgical supplies of the Nile expedition, and packing of most of the stores of the movable field hospital. A supply of medicines sufficient for an hospital of 50 patients for two months packed in five of these boxes, numbered 1 to 5, was found most useful. They were sent up to Fatmeh, 1,300 miles, without difficulty. The loss of a particular box could be easily and promptly replaced by a similarly numbered box from another set. Should be made of thoroughly seasoned and light wood, with other fastenings for the lids besides screws, which quickly became useless.

The "Field Companion" was found most useful for small detachments separated from regiments for short periods.

Back pads to keep off the sun were of considerable advantage, but goggles were rarely used, and not liked by the men. Helmet curtains were found to be a great additional protection when issued. The ordinary helmet did not shade the head and temples sufficiently.

Mincers should form part of the equipment of every hospital, and each company should be furnished with one.

The packing of hospital stores per units of 25 beds answered well, supplemented by other articles where necessary when the transport arrangements allowed. With the necessary tents each unit weighed 1½ tons.

Screw-drivers, piercers, and hones were found most useful articles of equipment.

In consequence of the great ranges of temperature in some parts of the Soudan, and the cold particularly at night, a second blanket was carried for each man, fitted with tapes and loops, so that it might cover the *tentes d'abri*, and mitigate the power of the sun when necessary.

Stretchers on Zavdofski's plan for railway transport of sick gave much satisfaction, as they almost entirely prevented the effect of vibration from the carriages being communicated to the patients.

Medical officers had power to draw imprests of money from the Pay Department when necessary, to enable them to purchase in the local markets for the sick. The privilege was largely availed of, and with good results. The employment of native labour for the more commonplace work of the hospital on the lines of communications allowed the Medical Staff Corps to attend more largely to their nursing duties.

It was found that the whalers could be used for the transport of sick at low Nile, and that they were most appropriate and handy for the work, besides being independent of wind and current.

The system of field inspectors on the long line of communications worked well.

Separate tents or huts for the treatment of native or other followers were found to be necessary at each station.

There were no mosquitoes in the hospitals in the Soudan.

At Abu-Klea the great utility of having a large number of stretchers to carry the men when wounded on with the square as it advanced was very marked.

After the severe fighting and desert march terminating at El Gubat, the hospital established there was singularly free from pyæmia, hospital gangrene, or wound diseases.

From Abu-Fatmeh to Akasheh the sick were carried on whalers, the only boats which could be relied upon, as independent of wind and current in a part of the river where steamers could not ply.

Ice machines proved quite useless in practice, the system not having been effective owing to the intense heat.

Field hospital blankets should be of a different colour to that of

the general service, to prevent loss. Four mosquito nets per section were sufficient. Sheets should be omitted where soap and washing materials are difficult to procure. Each section should have an operating lamp.

The 2nd Royal Sussex Regiment was the first to proceed up Nile, leaving Cairo, March 18th, 1884, for Assiout, near to which place it was encamped for the most part of the summer. It was then transferred to Assouan—afterwards ordered to Wady Halfa. In the middle of September it was at Dongola, proceeding there in nuggurs, and arriving in three weeks after a tedious journey. In 1885 the following were its health statistics:—

Average annual strength, 740; admitted, 1,363; died, 13; invalided, 98; average number of constantly sick, 68·06. Rate per 1,000—admitted, 1841·8; died, 17·24; invalided, 132·43; constantly sick, 91·42. Average sick time to each soldier, 33·36.

Instructions for the Medical Officers in charge of Sick Convoys in Boats from Abu-Fatmeh to Sarras (Wady-Halfa).

1. The medical officer is responsible for the management and discipline of the sick and attendants, subject when at the posts to the officer commanding the troops, if the officer has a commission in the British army.

2. The medical officer should occupy the fastest boat in the convoy, so as to be able to be present at any point when required; distribute his men of the Medical Staff Corps so as to have one if possible in each boat, and issue to them definite instructions, orders as to the formation in which the boats are to proceed, &c.

3. At different posts to apply to the officer commanding troops for any assistance required, and not disembark his sick until he has ascertained that everything necessary for their reception and transport has been arranged by the officer commanding the post at the different portages.

4. He can obtain urgent supplies from the hospital at Dal, also at Sarras.

5. He should be in the leading boat before stopping for the evening, in order to indicate where the convoy was to halt, and stop in time to allow of the sick being examined and prescribed for. All the sick should be carefully inspected at this time.

6. At the end of the voyage, "Weekly States," ending each Friday, should be completed, and other documents prepared in accordance with instructions.

7. The medical officer will make all haste to return to Abu-Fatmeh, and bring with him all his men, stores, and drugs (not consumed), replenishing the stock at Halfa Hospital.

8. At the portages all helpless cases are to be carried on stretchers by hand, all others to ride or walk.

9. The medical comforts to be so placed that waste or pilfering of them cannot be effected during the journey.

10. The medical officer will be furnished at Abu-Fatmeh with a list of stores in the boat, and will be responsible for them until he has returned them into stores at Abu-Fatmeh.

11. The superintendent medical officer at Abu-Fatmeh will furnish books, stationery, and forms for use in the boats.

12. All men of the Medical Staff Corps who have to be admitted into hospital at Dal, Wady-Halfa, or during the journey, are to return to Abu-Fatmeh as soon as they are discharged from hospital.

13. On arrival at Sarras the medical officer in charge of the convoy will ask the officer commanding the post to telegraph to the hospital at Halfa the departure of the convoy, or will do it himself.

14. When returning to Abu-Fatmeh he will take charge of any stores or supplies for posts up river.

15. Non-commissioned officers with the convoy, if not too ill, will assist in maintaining discipline and order in the boats; should be directed to do so, and be distributed accordingly.

16. The soldiers in the boats are to be warned before starting that they are not to interfere with the crew in their management.

17. The interpreter is to explain to the captain of the boat everything necessary.

URTICARIA OF THE TONGUE.

Dr. Bock (*La Clinique*, No. 18) reports a case of urticaria of the tongue in a patient thirty-eight years of age. The patient was subject to such attacks after eating mussels. The onset of the attacks was very sudden and alarming; the tongue became greatly swollen, the larynx œdematous, and he was unable to speak. Dr. Bock ordered a mustard footbath and a hypodermic of atropin, and in a short time the alarming symptoms disappeared.—*L'Union Médicale*, No. 130.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Army Medical Department. Report for the Year 1888 ; *with Appendix.* Vol. XXX. London. 1890. Pp. 411.

As is customary, this Report for 1888 is dated May, 1890, and is of little value except for record. The health of the British Army two or three years ago does not excite a thrill of interest. There are, however, two or three points to which attention may be drawn.

At page 32 will be found a section *On the Recruiting of the Army*, perusal of which is not encouraging as regards the *physique* of the classes which supply "food for powder"—or disease—in these kingdoms. We find that of 49,172 candidates for enlistment who presented themselves in 1888, 459 per 1,000 were rejected as unfit. As might be expected, the military medical officers were more difficult to satisfy than the civil practitioners, rejecting 459 per 1,000, while the latter rejected only 208. Of the 5,268, moreover, accepted by civil medical men, 1,469 (221 per 1,000) were rejected on secondary inspection by the military surgeons. It is to be noted, also, that, so far as we can judge from comparisons of *two* years only, some deterioration in the quality of candidates is visible. In 1888, 455 per 1,000 were rejected as unfit for the service; in 1887, 452. The number 455 is raised to 459 by addition of 219 recruits discharged within three months of enlistment as "unlikely to become efficient soldiers."

A comparison of the three divisions of the United Kingdom supplying the recruits is favourable to Ireland. The proportions per 1,000 which they supplied in 1888 were:—England and Wales, 778; Scotland, 91; Ireland, 118—the remaining 13 coming from "British Colonies and Foreign Countries." Compared with 1887, these ratios show an *increase* of 15 for England and Wales, a *decrease* of 5 for Scotland, and of 11 for Ireland. But the ratio of rejections is *higher* for the two former countries by 2·53 and 8·13 respectively: while the ratio for Ireland is lower by 11 than that of 1887.

PLYMOUTH

In *age*, again, there are signs of decline. Of 10,000 recruits accepted in 1888, 4,215 were aged between 18 and 19, 2,041 between 19 and 20. The former class is more numerous, the latter less, than in 1887.

The *height* table is instructive—408 recruits per 10,000 were *under* 63 inches; 507 between 63 and 64; 2,325 between 64 and 65. This is the highest ratio from "under 63" to "6 feet and upwards," which supplied 73 per 10,000. Now, the average height of mature Englishmen is 67·5 inches, of Irishmen about the same, of Scotchmen considerably greater. Only 1,222 recruits per 10,000 were admitted between 67 and 68 inches in height in 1888. Comparing this year with 1887, we find an *increase* of 90 per 10,000 in recruits under 63 inches in height, of 122 between 63 and 64, and of 48 between 64 and 65, while the ratios for the greater heights have diminished; but, in both years, we are told, that "omitting boys, the highest proportion of recruits at any age of any height per 10,000 finally approved was 3,121 between 18 and 19 years, and 5 feet 4 inches to 5 feet 5 inches in height."

The section devoted to the "Dublin District" is amusing, and suggests a doubt whether we can confidently rely on other portions of the Report relating to places of which we have *not* personal knowledge. The sanitary condition of the vicinity of the Pigeon House Fort is, we are told, "very unsatisfactory," because the main city sewer—not, be it observed, the Liffey—passes "in close proximity;" and we are informed that the Royal Hospital, Beggars' Bush, Richmond, Linen Hall, and Ship-street Barracks, are "in the midst of crowded and dirty localities"—which is not true of three out of the five—and also that they are all situated on *an* objectionable site, *close to* a river polluted with sewage.

We quote from the Appendix on Hygiene an interesting instance of enteric fever produced by impure water—interesting, as the Reporter, Professor Notter, of Netley, remarks, "not only as an example of the method employed to ascertain the source of the impurity, but also on account of the distance sewage matter percolated through the soil before entering the well":—

"An epidemic of enteric fever occurred at New Herrington, Durham, in April, 1889. There were in all 275 cases reported between the 1st April and the 7th June, on which date the epidemic may be said to have ceased.

"The cause was traced by Dr. Page to the pollution of a deep well (330 feet) by the overflow from a tank containing farm sewage, situated *three-quarters of a mile* above this well. The overflow escaped and dis-

appeared down a fissure in the ground, which entered the well through a crack in the steining 45 feet below the surface. Two tons of salt were thrown down this fissure, and the chloride entering through the "feeder" in the well rose from four grains per gallon to a maximum of 24 grains per gallon. The source of impurity was thus clearly established."

In the same Appendix we find a notice of a condensed milk, called "Pure Sterilized Alpine Milk," which contains no added sugar, and which, mixed with twice its bulk of water, is "equal to ordinary milk of good quality." Comparative analyses of both show no important difference. This milk must be used at once, being unfit for use twenty-four hours after opening of the tin.

Appendix VII. is a case of snakebite, reported by Surgeon Cree. A private of the East Yorkshire Regiment was bitten in August, 1889, by a viper *(Pelias Berus)*, which he picked up on Strensall Common, Yorkshire, and which resented introduction to the soldier's pocket. The treatment consisted in the hypodermic injection of liquor ammoniæ acetatis—liquor ammoniæ, for some unexplained reason, not being forthcoming—and sp. ammoniæ arom. in draughts. He was discharged well on the eighth day, with only some weakness of forearm and hand, the bite having been on the tip of the right index finger.

A Dictionary of Practical Medicine. By various Writers. Edited by JAMES KINGSTON FOWLER, M.A., M.D.; Fellow of the Royal College of Physicians; Senior Assistant Physician to the Middlesex Hospital, and Lecturer on Pathological Anatomy in the Medical School; Senior Assistant Physician to the Hospital for Consumption and Diseases of the Chest, Brompton. London: J. & A. Churchill. 1890. Pp. 942.

Now and again a medical work issues from the press, which it is a pleasure rather than a task to review. Such a work now lies before us. On several occasions we have referred for information to its pages, and never in vain or without feeling that here, indeed, is a reliable guide to medical knowledge.

The scope of the work is limited to Practical Medicine, including also the Diseases of Women. The articles are concise and crisp, as a rule well written and thoroughly up to date. They generally include paragraphs on treatment, which will be found especially useful, as the exact doses and combinations of the various drugs recommended are in most cases given in full.

The work runs to 942 pages; but being printed in double, closely set columns is not of unwieldy size. It opens with a list of contributors, containing forty-two names of well-known hospital physicians and school teachers. We notice that not a single contributor is resident in Ireland or Scotland. Most of the articles are signed, and the greater number of those which are unsigned are by Dr. John Abercrombie, Physician to Charing Cross Hospital, or by the Editor, Dr. James Kingston Fowler, Senior Assistant Physician to the Middlesex Hospital, and Lecturer in Pathological Anatomy in the Medical School attached thereto.

After the list of contributors comes a general index, including a list of the articles with numerous cross-references. The subject matter of the articles is printed in small capitals throughout this very full index.

One of the longest contributions to the pages of the Dictionary is the opening article on the diagnosis of Abdominal Tumours by Dr. Sidney Coupland, of the Middlesex Hospital. It runs to eleven pages and appears to be comprehensive and well-arranged under the headings—tumours arising in the abdominal wall, tumours connected with the peritoneum and sub-peritoneal structures, tumours connected with the abdominal viscera, such as the stomach, intestine, liver and gall-bladder, pancreas, spleen, kidney, supra-renal capsule, and female pelvic organs; tumours connected with bone, abdominal aneurysm, and phantom tumours.

Two new diseases are described at page 17 to 21 inclusive—acromegaly and actinomycosis. The respective authors are Dr. W. B. Hadden and Dr. Theodore Acland, both of St. Thomas's Hospital. An excellent bibliography is appended to Dr. Acland's article on actinomycosis. Writing on Addison's disease, Dr. Abercrombie inclines to the view that the malady is primary in the adrenals, and that the changes found in them are due to the presence of tubercle. We mention this, because it occurs to us that Koch's method of treating tuberculosis might be employed in this instance for diagnostic purposes.

Dr. Isambard Owen's series of papers on "Alcohol," "Alcoholic Liquors," and "Alcoholism," seem to us to be of a very high order of merit indeed, and we thoroughly endorse his opinion that "except in the event of extreme weakness alcohol is better avoided altogether in the treatment of most cases of delirium tremens. In some instances, however, a moderate amount of malt liquor—*e.g.*, a pint of porter daily—seems to be beneficial."

Dr. C. E. Beevor and Dr. W. B. Hadden have been entrusted with the important subjects of Diseases of the Brain and Spinal Cord respectively, and they have done their work admirably—witness the papers on Aphasia, Apoplexy, Brain Diseases and Functions, Bulbar Paralysis, &c., by Dr. Beevor, and those on Locomotor Ataxia, Progressive Muscular Atrophy, and the Functions and Diseases of the Spinal Cord by Dr. Hadden. This author also contributes an article on Myxœdema.

Dr. Robert Maguire has good articles on Bright's Disease, Diabetes, the Pulse and the Sphygmograph. Dr. Dawson Williams writes clearly and well on Cholera, Diarrhœa, and Dysentery; Dr. Percy Kidd contributes papers of considerable merit on Angina Pectoris, Expectoration, Hæmoptysis and Heart Diseases.

The Gynæcological subjects have been assigned to Dr. George Ernest Herman, Obstetric Physician to the London Hospital, and Lecturer on Midwifery.

Among miscellaneous topics we find micro-organisms discussed with much ability by a very competent authority, Mr. Edgar Crookshank. The same criticism applies to Dr. T. W. Hime's account of malignant pustule.

The Fevers are described by Dr. W. Cayley (Typhoid), Dr. E. O. Hopwood (Typhus, Rötheln, and Scarlet Fever), Dr. Dawson Williams (Relapsing Fever), Dr. Abercrombie (Measles, Chickenpox, and Smallpox), and Dr. Pringle (Erysipelas). At the beginning of the article on Smallpox there are two striking misprints—"papular" for "pustular," and in the second paragraph a transposition of the word "no." The important question of the treatment of smallpox is done scant justice to by Dr. Abercrombie.

It would be impossible to go through this work in analytical detail, but the sketch we have given of its authorship and contents will suffice to recommend it as a ready work of reference to physicians and gynæcologists in busy practice.

Lectures in Physiology, Hygiene, &c., for Hospital and Home Nursing. By CHARLES. E. FITZGERALD, M.D. London: George Bell & Sons. 1890. Pp. 157.

THIS is one of the many courses of lectures given under the auspices of the St. John Ambulance Association which have found their way into print, but Dr. Fitzgerald has gone over his work so carefully that the crudeness generally attending printed lectures is completely

removed, and a clear and useful handbook of nursing is produced. In such a short book full acknowledgment of obligations is not to be expected, but the author might have mentioned the Handbook of Nursing issued by the Association, from which he borrows wholesale.

In some few points the advice given by the author is not quite reliable. The following points are selected from different parts of the book :—

"The pillows should be cool; chaff or even finely torn up papers is a good substitute for feathers, and in some cases hops may be used with advantage." There are not many cases in which these substitutes will be preferred to feathers, and certainly the author has never tried a paper pillow or he would not recommend it to others.

"Cut flowers also greatly tend to brighten its appearance; they have also a good effect in helping to oxygenate the air. . . . Living flowers absorb the noxious carbonic acid which we exhale, and they give off the oxygen so necessary for us." It is perfectly true that the chlorophyll of plants under the influence of sunlight utilises carbonic acid gas, setting free oxygen, but it is only an assertion that cut flowers do this; and whilst whole plants have this power, and it is an interesting fact worthy of mention, it is utterly absurd to write of it as having any appreciable effect in the atmosphere of a bedroom.

Corks are recommended for lighting a fire. We would only say to the author—"try them!"

The methods of making beef-tea are not wisely chosen, and it is quite impossible to "simmer . . . at a temperature of only 95° or 100° Fah." The statement that the beef from which beef-tea has been extracted at a temperature of 180° F. can be made into a "nutritious potted meat" will not meet with general acceptance.

"The height of the bed should be such, that when the patient is sitting up in bed his head is level with the nurse's shoulder." Simple as this sounds it would not be easy to carry out, as the coincidence of a tall nurse with a short patient, or a short nurse with a tall patient, would upset otherwise good arrangements.

The nurse is told to put on the hot flannel for fomentation immediately after the water is wrung out of it, and nothing is said about shaking it up so as to admit air between its folds.

The advice that "mattresses, pillows, &c., should be taken to

pieces and cleaned at least once a year" will appear to most housekeepers to be an unattainable ideal.

Although pointing out these evidences of hasty or insufficiently thought-out work, we would like to emphasise the fact that the book is a good one, indeed one of the best of its kind, and that while there are some errors there are many good points. We would especially praise the good, clear directions concerning baths, the hints on appetising methods of cooking fish, and the directions for disinfecting.

Transactions of the Association of American Physicians. Fifth Session. Held at Washington, D.C., May 13, 14, and 15, 1890. Vol. V. Philadelphia. 1890. 8vo. Pp. 275.

This volume contains the papers—nineteen in number—read before the Association of American Physicians at their Session in 1890. There are only 100 members, of whom 49 attended the meeting; but if we may judge from the excellence of the contributions, numerical deficiency is more than compensated by the high qualifications of the gentlemen who constitute the Association. We observe that Philadelphia supplies the highest proportion of members, and also that the Dominion is well represented.

The volume opens with an essay on that perennial subject—"Enteric or Typhoid Fever," in which Dr. Reeves, of Chattanooga, gives the result of his forty years' experience—"alike in sparsely-settled country districts, in village, town, and city; and where influenced neither by crowd-poison, medical treatment, nor the impress of particular idiosyncracy." He argues elaborately in favour of Professor Wood's nomenclature of the disease, though he lacks the courage to adopt it in his title, to the exclusion of the meaningless "typhoid." It is remarkable that Chattanooga itself is almost completely free from enteric fever. In the course of the discussion which followed, Dr. H. A. Johnson, of Chicago, mentioned a fact—of special interest to ourselves in Ireland—which came under his own observation, in a locality in which the diseases were almost all attributable to malaria:—

"A starch factory was established for the purpose of making starch from potatoes, and the farmers around raised a large quantity of potatoes for this use. Some delay in regard to the machinery occurred, and nearly 100,000 bushels of potatoes decayed. This was on the bank of a little stream. There broke out, in the next month or two—first, an

epidemic of cerebro-spinal meningitis, which had never been known in that region. This was followed by typhoid fever. It was a new disease; the physicians had seen no cases of the fever before. From that time on it continued to prevail in that locality. . . . The first cases occurred down the stream from the location of the starch factory."

He asks "whether non-pathogenic bacteria or bacilli may not be so modified by cultivation under peculiar circumstances as to be the efficient causes of diseases such as have been described?" In reply, Dr. Reeves intimates his belief that the disease *must* have been introduced by a previous case. He has "no more faith in the *de novo* origin of enteric or typhoid fever than I have in the spontaneous origin of small-pox."

Professor William T. Lusk, of Bellevue Hospital, New York, contributed a paper on "Antisepsis in Midwifery," in which he gives, in illustration of the advantages of modern methods, the experience of the "Emergency Hospital"—"an old engine-house, fitted up for urgent cases" received after labour has actually set in. "It receives, constantly, women with high temperatures due to infection before their entrance, or who have been days in labour, or who have been subjected to unavailing attempts at artificial delivery by outside physicians." Here, under the least favourable conditions, 837 women were treated in five years, with only 16 deaths—1 in 82. This result is due to the observance of the strictest antiseptic precautions. "The occasional appearance on the scene of an individual who uses his 'common sense'—*i.e.*, one who does not believe there is any harm in witnessing an autopsy, or in visiting a companion in the erysipelas ward, or in holding the pus-basin in an operation for pyo-thorax—is almost certainly followed by temperature elevations, which add fresh testimony to the efficacy of a rigid observance of antiseptic regulations." Professor Lusk cites figures in illustration of the importance of his subject, and also of the improvement which has already followed antiseptic practice of midwifery. In the past five years, in New York city, one-tenth of the deaths in women between the ages of fifteen and forty-five were due to puerperal causes, and one-twentieth of the deaths among women in the child-bearing period were the result of puerperal sepsis. On the other hand, the mortality due to this cause has not increased in proportion to increasing population. In the period 1867–75 the average annual mortality caused by puerperal sepsis was 215·5; from 1885 to 1889 inclusive it was 221; but the population of the city, which in 1870

was 942,292, was 1,169,305 in 1875; in 1885, 1,553,730; and in 1890, 1,755,292.

From a paper by Professor Israel T. Dana, of the Maine Medical School, entitled "Seizures, characterised by shock and sudden Coma," we extract the following case of aphasia, or, as he prefers to call it, "monophasia." The patient, a man of forty-five, had suffered from a stroke of apoplexy a week before he was seen by Dr. Dana. He was hemiplegic on the right side:—

"His vocabulary consisted of three words—'yes,' 'no,' and 'boudeegy.' His wife proposed that he should read me his favourite hymn, and he read, with great animation and satisfaction, four verses, as follows:—

"'Boudeegy, boudeegy, boudeegy, boudee,
Boudeegy, boudeegy, boudee;
Boudeegy, boudeegy, boudeegy, boudee,
Boudeegy, boudeegy, boudee.'

"He looked up at me eagerly for sympathy in the sentiment. I saw him repeatedly within the next few months. The hemiplegia passed off; his health was restored; the aphasia remained. Ten years later I met him in the cars. He greeted me with a warm shake of the hand, a bright expression of the face, and the single word 'boudeegy.' He introduced me to the gentleman sitting beside him—'Boudeegy, Boudeegy.' 'Glad to know you, Mr. Boudeegy,' said I, and we shook hands cordially. He had opened a village store, and was engaged in successful business. He controlled affairs; his clerk did most of the talking. He had added, as I learned, one word to his vocabulary. Under extreme provocation he would say 'damn.' Last summer I met his old physician, who told me there had been a religious revival in the village; our patient had become interested, and had left off saying 'damn.' He had reduced his scanty vocabulary 25 per cent. for conscience' sake."

In a previous debate the subject of "Sleep, and its Disorders" was referred to Dr. S. Weir Mitchell, of Philadelphia, and Dr. Charles F. Folsom, of Boston, for report. The papers of both appear in this volume. Dr. Mitchell discusses certain disorders of normal sleep, including the states which he denominates the *præ-dormitium* and the *post-dormitium*. The relation of the former state to insanity, to which Baillarger alone appears to have devoted as much attention as it deserves, is the first subject of which Dr. Mitchell treats. "Certain persons," he says, "otherwise still sound, are liable to have, between waking and sleeping, hallucinations, which long precede the outbreak of insanity;" and hence, "it will possibly be found that valuable prognostic indications as to insanity may be gained by examination of the præ-dormitium."

In connection with this subject he mentions a remarkable case, in which the effect of bromides in producing destructive tendencies was foreshadowed in the pre-somnic state. An epileptic lad, taking full doses of lithium bromide, began, about the seventh day, to have visions, as he was falling asleep, of himself killing other children. "After several nights of like distress the homicidal tendency broke out in abrupt and dangerous violence during the day time." The occurrence of epileptic fits, it may be added, did not, as is usually observed, diminish the destructive impulses so long as the bromide was given. We can only notice one other disorder of sleep discussed by Dr. Mitchell in this most valuable report—Respiratory Failure in Sleep:—

"Where, for some reason, the respiratory centres are diseased, or disordered, a man may possess enough ganglionic energy to carry on breathing well, while the will can supplement the automatic activity of the lower centres; but in sleep, these being not quite competent, and volition off guard, there ensues a gradual failure of respiration, and the man awakens with a sense of impending suffocation. . . . The symptom is sometimes a signal of dangerous meaning. I have met with it in extreme neurasthenia; but in worse forms in locomotor ataxia in its paralytic stage."

Dr. Folsom, in his Report, restricts himself to the subject of Insomnia, which he treats very fully and ably. In his remarks on treatment he warns us against unnecessary resort to therapeutic interference, a few sleepless nights notwithstanding:—"In some individuals, and in some families, a wakeful week, with little sleep each night, is not a matter of concern, as compared with acquiring the habit of depending on narcotics." He lays down rules, of great practical value, for determining when hypnotics should be used, and which. Amongst these, he suggests "a few bottles of beer at bedtime" as sometimes highly efficacious. We quote, as a sample of Dr. Folsom's essay, his statement of the "chief indications in insomnia":—

"To give hypnotic drugs rarely, and only in cases where other measures have failed; to raise, as far as is possible, the small dose, repeating as needed, so as to avoid the over-action or the cumulative effect of large doses; to be satisfied with the least amount of sleep that is safe, if produced by medicine; to avoid drugs as a rule, except for euthanasia, where the mental condition is not such that all the after-effects can be noted; to bear in mind the fact that hypnotics given to induce sleep may increase wakefulness; to be on guard for unpleasant or toxic results

when any drug is given in sufficient dose to produce prolonged and profound sleep; to give the large dose when it is indicated; not to expect the same action or tolerance of new medicines in sensitive private patients as in hospital practice."

Dr. Wharton Sinkler's paper on "Migraine" collects the additions which the last few years have made to our knowledge of the ætiology and treatment of this troublesome complaint. The connection between migraine and carious teeth, to which Lauder Brunton drew attention, and that between it and the second dentition in children, observed by Dr. Louis Starr, are noted. The treatment, as might be expected, is various exceedingly. Dr. Sinkler himself prefers cannabis to any other drug, but warns us of its variability in strength, and advises to begin with a minimal dose.

Tuberculosis, of course, does not escape attention; and a rabbit was exhibited, in which general tuberculosis of the intestine had followed the subcutaneous injection of a few drops of milk from a suspected cow.

"A child fed on this same milk was dead of tubercular meningitis: and a second, fed on the same milk, was showing the same symptoms. Bacilli of tuberculosis have been found in the lesions; and the *post-mortem* examination of the rabbit was made six weeks after the inoculation. This rabbit was one out of four inoculated—of which number, three showed the same appearances upon *post-mortem* examination."

Subsequently, Dr. Shakespeare, of Philadelphia, read a paper entitled "What can be done to Limit the Prevalence of Tuberculosis in Man?" He begins by discussing the important question—Is tuberculosis at the same time essentially infectious and essentially hereditary? We can all remember, without much effort, a time when English and Irish physicians laughed at the notion of the infectiousness of phthisis, and made merry over the cautious prejudices of Italian lodging-house keepers objecting to accommodate consumptive patients—*Nous avons changé tout celà:* and now its communicability is become axiomatic; and Dr. Shakespeare's assertion that "we have ample ground for the belief that tuberculosis is essentially infectious" surprises no one. He asserts, with equal confidence, that "tuberculosis in man is essentially non-hereditary," though to affirm this "is by no means to affirm that the influence of heredity has nothing to do, in any case, with the existence of the disease." Susceptibility to the

disease may be hereditary though the disease itself is not; and such "transmitted vulnerability . . . may be within the power of the family physician, through wise counsel respecting hygienic surroundings, wholesome, nutritious food, and judicious physical culture, to do much ultimately to remove."

We shall conclude with quoting a protest made by Dr. Ernst, during the subsequent discussion, against the dogma that all phthisis is true tuberculosis. He stated the case thus:—

"All tuberculosis is produced by the bacillus of Koch, and all tuberculosis of the lung is phthisis. But the converse does not hold true; for *not* all chronic destructive processes in the lung (phthisis) are tuberculosis. It is indisputably proven that some of them may be due to other causes."

Twenty-sixth Report of the Trustees of the City Hospital, Boston; with Reports of the Superintendent and Medical and Surgical Staff, Rules for Admissions and Discharges, Prospectus of Training-School for Nurses, &c. Boston: Rockwell & Churchill. 1890. Pp. 153.

The City Hospital of Boston contains 480 beds, and its Report, now before us, gives the usual account of the year's working of a well-managed institution. It offers little requiring special notice; 6,157 patients were admitted—3,466 medical, 2,557 surgical, 88 ophthalmic, 46 aural; 3,654 males and 2,503 females. Our own country is most deeply indebted to Boston *hospitality*, having supplied 1,792 of the admissions, Boston itself contributing only 1,445, and the British Provinces 692. The cost of each patient was \$11·03 per week; but \$49,650 was paid by or for patients, reducing the average weekly expense of each patient to the City Treasury to \$7·96. Through "stricter collection, better work in ascertaining settlements, as well as the greater demand for accommodation from those desiring and willing to pay," £4,340 more was collected than in the previous year. We observe that nurses "are required to wear broad-toed and flat-heeled boots," and that "if the teeth are out of order in any way, they must receive attention" before candidates are admitted to probation. The rules for nurses' hours of duty, &c., seem fair:—

"Hours of duty for day-nurses are from 7 a.m. to 8 p.m.; for night-nurses from 8 p.m. to 7 a.m. No nurse is required to do both day and night duty on the same day, except in rare emergencies. Each nurse on

day duty is allowed one hour after two o'clock p.m. for rest and recreation, one half day after 2 p.m. each week, and four hours on Sunday. Two weeks' vacation is allowed each year. If nurses are sick they are cared for in the hospital, but wages are stopped. Nurses on night duty are required to be in bed until 4 p.m. Nurses may be called upon for four months' night duty during the two years' training."

We observe, also, that cumbersome complexity of dietaries is avoided. Here there are but two—"Milk" and "House"—with ample provision for extras when required. It seems odd that *fish* appears nowhere in the dietaries, or in the list of extras, except in the Friday dinner.

Handbook of Diseases of the Eye. By H. R. SWANZY, F.R.C.S.I. Third Edition. London: H. K. Lewis. 1890.

THIS well-known work evidently continues to increase in favour as a text-book, for very little more than two years have elapsed since the appearance of the second edition, and now we are presented with a third, whereas four years intervened between the first and second.

No change has been made in the outward appearance of the book, and its bulk has not perceptibly increased, although 52 new pages have been added. The chief alteration which has been made is in the arrangement of the material. The chapters on diseases of the iris, ciliary body, and chorioid and sympathetic iritis, have been incorporated into one, under the heading of Diseases of the Uveal Tract. Others have also been re-arranged and improved, notably those on disease of the lacrimal apparatus, of the cornea, and sclerotic and crystalline lens.

In treating of the pathogenesis of cataract and corneal affections, the author has wisely availed himself of the best recent text-book in Germany—Fuchs' *Augenheilkunde.* Amongst the minor improvements, but important from the student's point of view, is the definition of terms which had not been explained in the previous edition. Hypopyon may be mentioned as an example. But why is it spelt hypop*i*on, although the derivation is correctly given? We never read of a p*i*ogenic membrane.

The value of eye symptoms in the localisation of cerebral disease has, as one would expect from the Bowman Lecturer on that subject, received more attention than in former editions. The most important addition in this respect will be found in the articles

on ptosis, paralysis of orbital muscles, and in the chapter on amblyopia and amaurosis.

Several new illustrations adorn the text, including one of pemphigus of the conjunctiva from a case of the author's. Fig. 52, which represents a case of pannus, is still retained, although it might be replaced with advantage by a better one. Illustrations of such common conditions as phlyctenulæ and keratitis punctata might also have been introduced; but, perhaps, they have been purposely omitted in order that the student should rely, as he ought to, on clinical experience.

We have much pleasure in stating it as our opinion that this book still continues to be one of the best, or rather the best, student's book on diseases of the eye in the United Kingdom, and there is no doubt that the present edition will still further tend to increase its reputation as a text-book.

Epilepsy: its Pathology and Treatment. Being an Essay to which was awarded a prize of 4,000 francs at the Académie Royale de Belgique, December, 1889. By Hobart Amory Hare, M.D., Univ. Penna., B. Sc., Clinical Professor of the Diseases of Children in the University of Pennsylvania, &c., &c. Philadelphia and London: F. A. Davis. 1890. Pp. 228.

This Essay contains a great deal of information on the subject of epilepsy. Beginning with the synonyms and history of the disease, the author proceeds to discuss the symptoms at considerable length. Many tables of statistics are introduced. The varieties of the disease—its ætiology, pathology, treatment, and prognosis—are treated of in a most painstaking manner. Many authorities are quoted throughout, and references given in footnotes.

Although the compilation of this book must have involved a good deal of research, and although it contains a great deal of information on the subject whereof it treats, nevertheless the prevailing impression it leaves on our mind, after a careful perusal, is one of disappointment. It is, as might, perhaps, be expected from the circumstances under which it was written, a synopsis of the views of many writers. The author, in his preface, says "he believes that it is fairly representative of the views held as most correct by the best minds of the profession." His object is, as he states in the section on the Pathology of Epilepsy (p. 155) to present to his readers all views on the subject, even views which

are now universally disbelieved. There could be no possible objection to this if the author would at the same time indicate and attempt logically to prove those views which he himself adopts; this, however, he does not always do; unimportant matters are put forward as prominently as those of greater importance, and the result is that one reads a multitude of things about Epilepsy, and fails to get any definite and striking idea of Epilepsy itself as a whole.

With regard to treatment, the author considers bromide of potassium the most useful drug. Of the more recently-introduced remedies, he considers the first place belongs to antifebrin, especially in cases of considerable duration. He recommends 8 grains three times a day. The most disappointing section of the book is that on operative treatment; concerning this subject, now become most important, there is practically no information of any value.

On the whole, therefore, we cannot recommend this Essay.

Cycling and Health. By OSCAR JENNINGS, M.D. Translated from the French of the Third Edition by J. CROSSE JOHNSTON, Brigade Surgeon, A. M. S. London: Iliffe & Son. Pp. 244.

ALTHOUGH cycling has not attained great popularity in France, and has not many adherents amongst the medical profession in that country, the best book dealing with the connection of cycling and health appeared in France, from the pen of a French doctor, under the title of "La Santé par le Tricycle," and has now been translated from the third edition into English.

Although the word tricycle is used in the French title, the book deals with 2-wheeled as well as 3-wheeled machines; but it shows that France is behindhand in cycling nomenclature, as does the notice in the title-page of the French edition:—"Ouvrage couronne par l'Union Vélocipèdique de France." It is a long time since velocipedes have been heard of here, although Dublin University still has a "*Tricycle* Club."

Dr. Jennings is never afraid to give his own opinion, but he devotes much of his space to the opinions of other medical men, giving in all cases full references. From this symposium valuable information is obtained, not only as to the effects of cycling in improving health, but as to its effects on those suffering from various maladies. Hernia is a disease in which cycling is often prohibited; the result of Dr. Jennings' investigation is to show

that medical men who *have tried cycling in such cases* are of opinion that in moderation it is not only not injurious but actually of advantage, and that it is far safer than exercise on horseback. Cycling is also recommended for varicose veins in the leg, and even for varicocele, and the cry of "perinæal pressure" is shown to be founded on theory rather than practice.

The history of cycling is pleasantly written, and the hints on clothing are first-rate. "Cycling and Health" is capital value for a shilling, and ought to be read by every medical man.

Pulmonary Consumption among Firemen. By THOMAS J. MAYS, M.D., Professor of Diseases of the Chest in the Philadelphia Polyclinic. From the *Medical and Surgical Reporter*, September 27, 1890.

DR. MAYS has done a good work and done it well. He collected statistics from Philadelphia, New York, Boston, Chicago, St. Louis, Buffalo, San Francisco, Washington, Cleveland, and Baltimore. Omitting the statistics of Washington and Boston, we find that the death-rate from pulmonary consumption is 33·73 per cent. of all causes of death. "But even this does not give a true idea of the fireman's liability to pulmonary diseases; nor, perhaps, of his whole liability to consumption, for it is quite certain that this disease makes a frequent beginning in pneumonia or bronchitis among these men."

The article is suggestive, elaborated with great care, and will well repay reading.

The Constitutional Requirements for Tropical Climates, and Observations on the Sequel of Disease Contracted in India. By Sir WILLIAM MOORE, K.C.I.E.; Honorary Physician to the Queen; late Surgeon-General with the Government of Bombay. London: J. & A. Churchill. 1890. Pp. 126.

WE are accustomed to receive Sir W. Moore's contributions to the literature of Indian Diseases with respect and gratitude; but we doubt if this seventh product of his teeming inkstand will add much to his own reputation or our knowledge. Most of what he tells us is undeniably true, and the result of long experience in Indian practice; but to some of his *obiter dicta* exception might be taken. For instance, a large and important part of British India,

lying north of the tropic, is not exposed to a "vertical sun;" we doubt if the "latest teaching" of even the most enthusiastic bacillomaniac attributes cancer to a microbe; and we do not think that Indian physicians will class diabetes with hereditary diseases. Some of Sir W. Moore's previous publications have proved so valuable to the Indian practitioner that we regret to appear to speak slightingly of this little book, which seems to us to have been hastily put together, and to be a not very successful attempt to compress a very large subject into a very small treatise.

A Zoological Pocket-book, or Synopsis of Animal Classification, comprising Definitions of the Phyta, Classes and Orders, with Explanatory Remarks and Tables. By DR. EMIL SELENKA, Translated from the third German edition by J. R. AINSWORTH DAVIS, B.A. Interleaved for Students' Notes. London: Charles Griffin & Co. Pp. 238.

THE intention of this work is pithily summed up in the author's preface:—"This pocket-book is intended to serve for the reception of my pupils' sketches and notes during lectures and practical work, and at the same time to facilitate a review of classification;" but this hardly shows its full scope, as not only the headings of classification are given, but the orders and larger groups are defined, and many individuals are named, the peculiar characteristics of some being given in brief.

Although about two-thirds of the book are blank paper, there is not nearly space enough for lecture notes, and the translator suggests that brief synopsis from lecture notes should be entered; but this will never lead to as useful a result as would a good note-book written altogether by the student, and freely illustrated with sketches from specimens and diagrams.

The translator claims to have made "numerous additions and revisions," but has not in any way distinguished his work from that of Selenka.

As an exhibition of the dry bones of modern classification, this book is of interest and use, but it contains too much for a students' pocket-book and not nearly enough for a text-book.

PART III.

SPECIAL REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.

By Ringrose Atkins, M.A., M.D.; Resident Medical Superintendent, District Lunatic Asylum, Waterford.

(*Continued from p. 70*).

IV.—NEURO-THERAPEUTICS.

Chloralimide.—M. Choay (*Journ. de Méd. de Paris*, Dec., 1889) describes this new compound, a derivative of chloral and ammonia, confounded with the combination known as chloralamide, which is an entirely different product obtained by the combination of chloral and formiamide, and which would, in accordance with Jacobsen's nomenclature, be called chloral-formiamide. Chloralimide is a colourless, odourless, tasteless substance, crystallising in long needles, fusible at 168° C. It is insoluble in water, but dissolves readily in strong alcohol and is still more soluble in ether; it dissolves also in chloroform and in fatty substances. It does not change from exposure to the air, light, or humidity; in fact, it is a remarkably stable compound.

M. Choay thinks that therapeutically it will be found more active than chloralamide, since it gives out more chloroform, and its tastelessness and durability will be of great advantage in a practical point of view. It would seem, however, advisable to await the publication of the results of physiological experiments, which, he says, have been begun, before employing it on human patients.

Chloralamide, discovered by Mering, consists of colourless crystals soluble in nine parts of water and one and a half parts of strong alcohol; it possesses a bitter but not unpleasant taste. Both aqueous and alcoholic solutions are unchanged by keeping and by weak acids; but by calcium oxide they are quickly, and by the alkaline carbonates slowly, decomposed. The melting point of

the crystals is 115° C. Experiments on dogs showed that the drug produced no deleterious effect upon the circulation. In artificial digestion slight retardation occurred. The conclusions drawn by Halasz from 194 administrations of the drug in 31 different patients affected with insomnia from cardiac trouble, phthisis, neuralgia, bronchitis, emphysema, disease of the spinal cord and of the stomach, chronic alcoholism, &c., are as follows:—

Chloralamide is a good hypnotic, but not absolutely certain in its effect. The dose is from two to three grammes (30 to 45 grains). It is seldom of use where the insomnia is dependent on pain or cough. It has no bad effect upon the heart or circulation, and may be administered with safety in valvular lesions and cardiac weakness. It is not free of after effects: in many cases headache, and in some dizziness, weakness, and dryness of the throat, and in a few vomiting followed its administration. A cumulative effect was not noticed, nor was any tendency to the formation of a habit observed.

Alt has also given the results of his experience with the drug. On the heart and pulse there was no effect, even with doses of four grammes (60 grains). In four healthy persons, in order to test the effect on digestion, he gave from three to four grammes together with a test meal, and found that after three and a half hours digestion had proceeded normally and no unpleasant effects were observed on the part of the stomach. Four grammes given to two healthy women produced in both, an hour after administration, dizziness and hebetude, and in one there was soon added a condition resembling intoxication, with excitement and unceasing talkativeness, whilst the other complained of giddiness and reeling headache, especially in the occipital region, with nausea and vomiting. Washing out the stomach of the last-mentioned woman showed it to be empty, and the vomiting did not cease even after this procedure. There was no change in the pulse beyond a slight increase in frequency.

The drug was administered to 41 persons suffering from insomnia due to different causes, 196 doses being given; and he concludes, from the results of these observations, that in many cases it causes sleep, especially in simple insomnia, and exerts no bad effects either on the circulation, respiration, or digestion, and gives rise to relatively few unpleasant effects, and on account of its taste is preferable to amylin hydrate. In the 41 cases, 12 times there was no hypnotic effect obtained from its administration; headache and

hebetude in 11 cases were the only unpleasant effects noted; sleep was produced in from half an hour to an hour and three-quarters after administration, and lasted from three to nine hours. Its sedative effect in small repeated doses was shown in three cases—one of well-marked delirium tremens, another of an excited hypochondriacal patient, and a third of a restless, nervous patient with hallucinations. In four other cases it failed completely. In a well-marked case of chorea, in a lad 11 years of age, five days' use of the drug, in doses of one grain three times a day, resulted in almost complete cessation of the choreic movements; and eight days' use in a similar case, in a girl who had been treated for fourteen weeks with arsenic without effect, gave a similar result.

The following are the conclusions arrived at by A. E. Malshin in an article in *Kowalewsky's Archiv.*, xv., 1, 1890, in which he gives details of his therapeutic experiments with the remedy in various forms of mental disorder:—

i. Chloralamide on account of its bitter taste is not always acceptable to patients.
ii. It is best administered in wine.
iii. The sleep it produces comes on in from one-half an hour to three hours after the administration of the drug.
iv. This sleep continues from one to ten hours.
v. It is effective in the insomnia of nervous and neurasthenic invalids, of alcoholism. and of acute and chronic paranoia without excessive excitement.
vi. It is ineffective in the sleeplessness of mania, progressive paresis, and acute and chronic paranoia with violent excitement.
vii. After its usage headache and vertigo are frequent.
viii. There is no evidence of any action on the pulse, respiration, temperature, or stomach.

Dr. Schaffer, of Pesth, reports the results obtained in 540 administrations of the drug to 46 patients suffering from various forms of insanity associated with sleeplessness. He found it efficacious in most instances, in doses of from one to five grammes (15 to 75 grains). In some cases it failed entirely, where chloral hydrate succeeded in smaller doses. Hypnotic doses sometimes caused severe headache, loss of appetite, and drowsiness, continuing through the following day. It does not seem, he adds, to have any decided advantage over other drugs of its class.—(*American Journal of Insanity.*)

Incompatibles of Antipyrin.—A Paris druggist, M. Blainville, dispensing a prescription of antipyrine and chloral hydrate in water observed an oily precipitate, having the smell of coriander. There was no resemblance to either drug in the taste of the resulting mixture.—(*Alienist and Neurologist.*)

Hypnal.—M. Bardet (*Journ. de Méd. de Paris*, April, 1890) gives to the above mixture the name hypnal, though he considers it rather as a convenient means of administering antipyrin and chloral than as a new drug. He says he has given it to children without their tasting it, which cannot be done with chloral. He records 22 cases in which he has administered hypnal; seven of these were of insomnia caused by toothache—three women and four men; five were cases of insomnia with cough—two men and three women; six were cases of insomnia due to various disorders. In all these cases a dose of one gramme has almost always been sufficient, two grammes being rarely employed. M. Bardet found that sleep was as easily produced as with chloral, and that pain was generally suppressed, or at least diminished, as much as by antipyrin.

Simulo.—Dr. V. Paulet (*Journ. de Méd. de Paris*, 1889) reports a number of cases of hysteria treated with simulo, in which it appeared to have decidedly good effects. He also employed the drug in a case of ovaritis with severe pain, and one of double pregnancy accompanied by nervous palpitations, violent headache, and complete insomnia, and obtained absolute relief in both cases. As regards its use in epilepsy he does not think that it can supplant the bromides, but that in some cases, and under certain conditions, not very well defined as yet, when the bromides seem inefficacious or contraindicated, it may be very useful. In one of his cases also chorea was apparently benefited by simulo. The alcoholic tincture of the drug is a bad form for its administration in epilepsy and hystero-epilepsy, since if given in any quantity the alcohol may neutralise the good effects.

As regards the safety of the medicine, he considers it quite innocuous in large doses. It appears to have, he says, no effect on the pulse or respiration; it causes no depression, and no mental excitement, and no disorder of the digestion.

Hyoscin.—Malfilatre and Lemoine (*Gaz. Méd. de Paris*) report the result of a trial of this agent on some 62 patients, mainly of the agitated maniacal class, with very favourable results. They find that in the great majority of their cases they had either an

immediate and continued hypnotic effect from very small (three to five-tenths mm.) or moderate (one mm.) doses administered hypodermically, and in only a very few were larger doses required; and also that there did not appear to be such uncomfortable lasting after symptoms as sometimes contraindicate the employment of other hypnotics. They feel justified in affirming that hyoscin is an excellent palliative in all conditions of insomnia with agitation, but decline to commit themselves as regards its curative effects. Its inconveniences are the temporary intoxication it produces in some very sensitive individuals, and the necessity of steadily increasing the dose to produce the hypnotic action in some few others. On these accounts the authors prefer hyoscyamin for general use.

Chloride of Sodium in the Treatment of Neuralgia.—Mr. George Leslie, in a paper read before the Medico-Chirurgical Society of Edinburgh and published in the *Edinburgh Medical Journal*, relates some remarkable results obtained by the application of powdered chloride of sodium—common table salt—to the nasal mucous membrane. The salt was used by the patient as a snuff, a pinch being taken with the nostril of the affected side, or else it was applied by means of an insufflator. In his practice Mr. Leslie used a small insufflator charged with about four grains, which he injected into the nostril while the patient was drawing in air. The operation produced little pain or discomfort. The mode of disappearance of the neuralgia, Mr. Leslie says, is noteworthy. So unattended is it by any form of shock or other unpleasantness, that, though the patient may be suffering from intense pain one minute, and be absolutely free from it the next, it is generally somewhat longer before he can realise his altered condition, and he usually employs a short time in introspection before announcing the favourable result.

Although a single application usually suffices for the inhibition of neuralgia, especially when it is recent and localised in one branch of the fifth nerve, in other cases where the disease has been of long standing and extensive distribution the author has found that insufflation repeated every half minute for five minutes was required.

Forty cases of cranial neuralgia and allied diseases were treated by this means with complete success, two or three with partial success, and only two without effect. The author cites in detail 20 of his successful cases, which include the following cases of supra-orbital

neuralgia, neuralgia of the right temple, odontalgia, facial neuralgia, facial neuralgia with odontalgia, frontal cephalalgia, vertical cephalalgia, neuralgia following herpes, orbital neuralgia accompanying facial erysipelas, neuralgia accompanying glossitis, cephalalgia accompanying tonsillitis and bronchial asthma.

Common salt has been used by Rabow, of Berlin, in the treatment of migraine; he found that it cut short an attack if given in a half-teaspoonful dose by the mouth as soon as the premonitory symptoms were noticed. Nothnagel noted that similar treatment was of service in epilepsy.

CONGRÈS FRANÇAIS DE CHIRURGIE, 1891.

The French Congress of Surgery will meet in Paris, at the School of Medicine, under the presidency of Professor Guyon, from Monday, March 30, to Saturday, April 4, 1891, inclusive. Communications relative to the Congress should be addressed to Dr. S. Pozzi, the Secretary-General, care of M. Alcan, publisher to the Congress, 108 Boulevard St. Germain, Paris. The Committee of the "Congrès français de Chirurgie" has put down the following questions for discussion on the programme of the Fifth Session:—1. Surgical interference in affections of the nervous centres (primary trephining of the cranium excepted); 2. Remote results of the removal of the appendices of the uterus in non-neoplastic affections of these organs; 3. The different kinds of suppuration investigated from the bacteriological and clinical point of view respectively. The opening ceremony will take place on Monday, March 30, at 2 o'clock in the afternoon, in the large Amphitheatre of the Faculty of Medicine.

LAPAROTOMY IN ITALY.

Dr. Ruggi, of Bologna, laid before the Società Italiana di Chirurgia, at its meeting in Florence, last year, the statistics of laparotomies performed by himself in 1889. The total was 65, with 5 deaths—7·7 per cent. Ten cases were ovariotomies—all successful. Of 17 removals of the ovaries, for various causes, only 1 was fatal. Porro's operation was performed 9 times, with 2 deaths. In the fatal case of "castration" death was due to internal hæmorrhage supervening on the third day, and fatal on the seventh. In one operation for the removal of periuterine sarcoma the rectum was wounded; death ensued, the sutures, which were immediately applied, having given way. In one case a calculus—the size of a hen's egg, and weighing about 20 grammes, probably a gall-stone—became impacted in the lower part of the jejunum, and was removed by incision through the abdominal wall. The patient recovered.

PART IV.

MEDICAL MISCELLANY

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Samuel Gordon, M.D., F.R.C.P.I.
General Secretary—W. Thomson, M.D.

SECTION OF SURGERY.

President—H. G. Croly, President of the Royal College of Surgeons in Ireland.
Sectional Secretary—Mr. W. Thornley Stoker.

Friday, December 12, 1890.

The President in the Chair.

The late Mr. Anthony H. Corley, Past President.

The President—Before we go on with the regular business of the meeting, I am sure you will think that it is only my duty to say a word with regard to the great loss which this College has sustained by the removal from amongst us of one who was respected and admired by everybody in the profession—our late lamented friend, Dr. Anthony Corley. It is only a month since he was here in good spirits, if not in good health. None of us had any idea that he was then in such a condition as might have led to his removal at any moment. It is unnecessary for me to do more than say that he filled almost every position since he commenced the profession—first an industrious student in the Ledwich School; then a teacher in the Carmichael School; next a surgeon to two important hospitals—first Jervis-street and afterwards the Richmond Hospital. In this College he was successively a Professor, a Councillor, a Vice-President, and President. He won everything that the profession could give him in connection with the College of which he was so distinguished a member. I now submit for your approval the following resolution:—"That the Surgical Section of the Royal Academy of Medicine in Ireland, of which the late Professor Corley was so active

and distinguished a member, begs to convey to his widow and family its sense of the loss which surgical science and the public have sustained by his early and most lamented death, and its deep sympathy with their bereavement."

The resolution was adopted, and

The Secretary was requested to forward a copy of it to Mrs. Corley.

Treatment of Lupus by Koch's Method.

Mr. Thornley Stoker exhibited two patients in whom lupus had been treated by Koch's method.

Mr. Kendal Franks, in view of the great importance and interest attached to tubercular disease, inquired as to the original condition of the patients and the mode of treatment, including the number of inoculations.

Mr. Thornley Stoker—The two cases exhibited were the only two I was at liberty to bring, as the others are undergoing febrile reaction and could not be removed from bed. One of those shown, a female child, is an old-standing case of lupus of some years' duration, involving the upper lip and opening of the nose, the cheeks, chin, and eyelids, and penetrating into the subcutaneous areolar tissue. On the 6th of December I gave an injection of 2 mgrms. of lymph. It produced a moderate constitutional reaction, the temperature rising to between 101° and 102°. At the same time there was severe local reaction. Most of the face, previously in a pale cicatricial condition, swelled and became livid red, assuming very much the appearance observed when erysipelas attacks the face, and vesication of the greater part of the diseased surface took place. The child did not suffer great constitutional disturbance, and the reaction subsided in 24 hours. The portion of the diseased surface that was superficial remains of a red colour, but all the ulcerating process seems to have ceased and the vesicles have scabbed. To-morrow morning I will give twice the strength of injection she had before—namely, 4 mgrms. of lymph. The other case is very remarkable as affording an example of a moderate dose of the lymph producing marked local reaction, and no constitutional reaction whatever. The patient, a man aged twenty-five, has had lupus since he was a child. It has not produced destructive ulceration of the skin, but spread in a cicatricial fashion underneath the cuticle. The first dose injected was one of 2 mgrms. As the result, in 8 hours the whole of the lupus patch became red and blistered, and a circumferential areola of about three-quarters of an inch became inflamed. The local reaction subsided in 24 hours. Next day he had a double dose—4 mgrms. There was a marked local reaction, but it was less than the first. Again, there was no constitutional reaction whatever—no sickness, no rise of temperature, no headache. Yesterday he got 6 mgrms., when slight constitutional reaction

took place, the temperature rising to about 100°, and he had a local reaction equal in degree to that following the second injection. The lupus patches are now dried up. I have given the injections either between the scapulæ, or below the inferior angle of one scapula or the other.

Operative Treatment of Sympathetic Ophthalmia.

Mr. Story read a paper upon operations on eyes blinded by sympathetic ophthalmitis, and gave the details of several cases operated on by various methods. His conclusions were that during active sympathetic inflammation no operation should be performed, and that after the subsidence of the inflammation the best operation is that proposed by the late Mr. Critchett, in which the lens capsule is divided by two cutting needles. If glaucoma occurs during active sympathy, and an operation is absolutely necessary, he would incise the cornea or sclerotic, but not do an iridectomy. Mr. Critchett's operation is better than iridectomy or extraction of the lens, because no hæmorrhage is produced, and less occasion is given for a fresh outbreak of inflammation. It has the great additional advantage of not making an opening in the globe through which a fluid vitreous may escape, as has been observed by Mr. Story, even when performing a simple iridectomy in an eye blinded by sympathetic ophthalmitis.

Mr. Maxwell suggested the use of Mr. Redmond's electric needle in such operations.

The President mentioned with approval the late Dr. Arthur Jacob's operation of immediate enucleation for injury from shot, and suggested that either that operation or emptying the contents of the socket would do away with the necessity of having to interfere with the sympathetically affected eye, while leaving a good pad for an artificial eye.

Mr. Story, in reply, said his object was to call attention to the operation described in his paper, though the result could not be regarded as very satisfactory. No doubt, had the injured eye been removed in time, as suggested by the President, there would not have been any occasion for an operation on the sympathising eye. He approved of Mr. Redmond's ingenious instrument, which he intended to use.

Transfusion and Intra-venous Injection of Milk and Saline Fluid.

Dr. Meldon read a paper on transfusion of blood and the intravenous injection of milk and saline fluid. Having reviewed the history of transfusion, he expressed his opinion that the evil results which have at times caused this operation to fall into disrepute have been occasioned by the employment of dissimilar blood. The author then narrated several successful cases of direct transfusion, as also one case saved by the injection of carbonate of ammonia and water. This paper

concluded with a *résumé* of the history of intra-venous injections of milk, which operation Dr. Meldon has performed thirty-two times with good results, yet he strongly advocated direct transfusion, whenever it was possible, in preference to any other variety of the operation.

Mr. Franks suggested that a $\frac{3}{4}$ per cent. salt solution would have answered the purpose for injection instead of carbonate of ammonia.

Sir William Stokes recalled an instance in which the late Dr. Robert M'Donnell carried out transfusion with happy results, in the case of the wife of an eminent lawyer. She was dying of hæmorrhage and her husband supplied the blood.

Mr. Thornley Stoker pointed out that transfusion or intra-venous injection was used for two different purposes. In one set of cases blood was introduced into the veins to supplement the failing power of nature and avert death from hæmorrhage, most frequently *post partum*. But in the other class of cases saline solution was introduced for the relief of a loaded right heart or for thickened blood, a melancholy example of which they had had in the case of their late brother, Dr. Corley, who was suffering, as the result of diabetic toxæmia, from failing brain, failing heart and pulmonary circulation. In Dr. Corley's case the effect of the injection was to produce temporary relief without ultimate benefit. Such operations in the second class of cases had not been proved to produce any permanent result. No doubt, a fillip was given to the failing powers of life, and the patient gained some temporary comfort, but as to ultimate good being done, it was a matter that required to be proved. But the injection of blood and nutritive fluid like milk in the case of persons dying of hæmorrhage was an operation on an entirely different basis. One lesson to be drawn from Dr. Meldon's paper was that Providence was unequal in the distribution of his gifts, for in his own large hospital practice he had never had an opportunity of introducing fluid into the veins of patients, while Dr. Meldon had no less than thirty-two opportunities of practising that operation.

The President, with reference to one of Dr. Meldon's cases, asked whether introducing the hand into an empty uterus, if hæmorrhage was not going on was not—in a case of collapse—a most dangerous proceeding? The late Alfred M'Clintock taught that if the placenta was retained with any symptom of collapse it was dangerous to introduce the hand into the empty uterus to remove it. He had himself been taught caution in an interesting case in which he was about to perform (with the late Dr. Robert M'Donnell's instrument) transfusion to save a woman's life. Her husband said he was willing to give some of his blood for the purpose; but having taken the precaution of examining him, the man proved to have valvular disease of the heart. In like manner, he should make sure that the kidneys were not diseased.

Dr. Cranny said he had had experience of three cases of transfusion done by the late Dr. Robert M'Donnell for *post partum* hæmorrhage. In two of them the result was perfectly successful, but the third patient died. There was an immediate increase in the volume of the pulse, and the general condition of the patient was so improved as to be noteworthy. It was a well recognised principle that when there was bleeding from the uterus, and either a portion of the placenta or clots remaining inside, the uterus should be emptied; but if there was collapse at the moment, the medical attendant should wait till the collapse was over. There would be no hæmorrhage during the momentary collapse, but if a piece of placenta were left in the uterus it would bleed.

Dr. Meldon, in reply, said he had injected saline fluid once, and on that occasion he had no time to obtain any other than what he carried to make the milk injection alkaline—namely, a 10 gr. powder of carbonate of ammonia. He used Dr. M'Donnell's transfusion apparatus; but for the direct transfusion he had Aveling's, substituting Dr. Robert M'Donnell's cannula for the ordinary one supplied. At each contraction of the ball he assumed that about half an ounce was injected. As regards Mr. Stoker's experience, his own intra-venous injections of milk were done in consumptive cases and cases of anæmia. With regard to the case of the removal of the placenta, the patient was tossing about when the attempt was made to remove the clots and check the hæmorrhage. The collapse came on while he was removing the placenta.

The Section adjourned.

SECTION OF MEDICINE.

President—J. M. Finny, M.D.; President of the Royal College of Physicians of Ireland.

Sectional Secretary—A. N. Montgomery, M.R.C.P.

Friday, December 19, 1890.

The President in the Chair.

Case af Left Hemiplegia with Aphasia.

Dr. Beatty exhibited a young girl, an example of left hemiplegia with aphasia. There was complete loss of taste and smell on the left side, and left hemianopsia was present and symmetrical.

Dr. C. J. Nixon remarked that left hemiplegia was usually explained by a double lesion in the common situation; but the fact of the patient being left-handed explained all the phenomena that existed, assuming there was a single lesion. In place of the left hemisphere administering

to the phenomena of speech, in this instance it was the right hemisphere that acted.

Dr. Beatty, in reply, located the lesion in the angle and posterior segment of the internal capsule on the right side.

A Case of Scleroderma.

Dr. Nixon read the notes of a case of unilateral scleroderma. [It will be found at page 97.]

Dr. Tweedy said it was well known that if those cases did not proceed to atrophy, they underwent spontaneous evolution, and the thickness of the skin eventually disappeared.

Dr. Beatty mentioned that eight years ago he had had a case of morphœa, the patient, whom he saw for a couple of months, being a girl. She suffered from tooth-ache and neuralgia in the branches of the fifth nerve. In the linear patches there was often neuralgic pain, but in the oval patches none. Atrophy had taken place. In the lower lips were two grooves extending on the inner side of the lip down to the alveolus.

The President said he had never seen a case similar to that of the boy exhibited, but he had seen one of general scleroderma of the whole body, and beyond interfering with the free movement of the joints and the action of the muscles, there were no contractions or deformities.

Dr. C. J. Nixon, in reply, said no doubt the history of cases of scleroderma showed a tendency to spontaneous evolution. There were generally two stages of the disease—first, infiltration, of an inflammatory nature; and secondly, atrophy. The scleroderma became gradually absorbed by a natural process independently or in spite of the use of drugs, which were of little avail in its treatment.

Cystinuria.

Dr. Walter G. Smith read a paper upon Cystinuria. The condition is a rare one, and scarcely 70 cases are upon record.

A boy, aged eight years, was reported by his mother to have passed urine of a fragrant, orris-root odour, and depositing a greenish sediment. The boy's health was excellent in all respects, and there were no symptoms of urinary irritation. Out of six occasions upon which the child's urine was examined, once only was cystin found. The crystals were identified by their form, solubility in ammonia, and insolubility in acetic acid. The true formula of cystin is $(C_3H_6NSO_2)_2$. Dr. Smith discussed in some detail our present knowledge of the physiology and pathology of cystin. The following summary may be given:—

1. Cystin, or a cystin-like body, occurs in small amount in human urine as a normal product of proteid metabolism.

2. No relationship exists between uric acid and cystin.

3. Associated with cystinuria, pathologically, is the occurrence, in the urine and fæces, of certain ptomaïnes, belonging to the class of diamines, viz.:—

(*a*) Penta-methylene diamine (Cadaverin), $C_5H_{14}N_2$.

(*b*) Tetra-methylene-diamine (Putrescin), $C_4H_{12}N_2$.

4. Normal urine and fæces never contain diamines, nor do they occur in cystin calculi.

5. The formation of diamines is due to the agency of specific bacteria in the intestine.

6. The exact nature of the correlation between cystinuria and diaminuria has not yet been determined.

7. Cystinuria may persist for years without apparent injury to the health of the patient.

8. The therapeutical indication is to disinfect the contents of the bowel.

Dr. Smith exhibited some microscopic slides showing the characteristic crystals of cystin.

The Section adjourned.

SECTION OF OBSTETRICS.

President—S. R. Mason, M.B., F.R.C.S.I.
Sectional Secretary—Andrew J. Horne, F.R.C.P.I.

Friday, January 2, 1891.

The President in the Chair.

Exhibitions.

Mr. M'Ardle exhibited—1. *Sub-peritoneal Fibroid.*—This tumour was removed from a patient aged thirty-two years. The peculiar points about this case are—1st, the only evidence she had of the tumour was the feeling of something falling about in the abdomen; 2nd, the first external evidence of the trouble was swelling due to peritoneal fluid; 3rd, the tumour was becoming gangrenous at one part, and the remainder, as well as the peritoneum, I found highly inflamed. Notwithstanding the extent of the peritonitis, the patient made an uninterrupted recovery.

2. *Ruptured Ovarian Cyst.*—This specimen I removed from a lady aged twenty-four years. The history of the case shows that in April last she consulted Dr. Malone, of Limerick. He discovered a tumour somewhat larger than an orange, and wisely recommended removal. His advice was not followed, and in June she got sudden and very severe abdominal pain and tenderness, with persistent vomiting. When she recovered the tumour could not be felt. Her health did not improve,

and I saw her for the first time in July, when she was so ill that I sent her to Bray for six weeks. Here improvement took place, and in October I performed laparotomy, removing from 8 to 10 pints of gray gelatinous material and this small cyst, the inner surface of which is covered with calcareous matter, and at one spot a mass of this substance standing out in the cavity. The questions I would ask in reference to this case are—1st, Was calcareous degeneration the cause of rupture? 2nd, How was the great amount of gelatinous fluid developed? 3rd, Could this fluid be removed by absorption? This patient recovered strength rapidly, and is now healthy.

3. *Large Ovarian Cyst.*—This case is of interest only from the fact that the tumour and general peritoneum were in a state of intense inflammation. Numerous adhesions existed, especially to the colon. I removed 35 pints of clear gelatinous fluid, irrigated the peritoneum with warm water from the day of the operation (before which the temperature was 103°). There was a gradual decline of all the symptoms of peritonitis, and on the twelfth day she left town perfectly well.

Dr. W. J. Smyly showed a large fibro-myoma which he had removed on account of hæmorrhage. The pedicle was treated extra-peritoneally, and the patient made a good recovery.—He also showed the tubes and ovaries removed for gonorrhœal salpingitis. There was extensive perimetritis, and the uterus was retroverted and adherent. The adhesions were broken down and the uterus was anteverted and stitched to the abdominal wall. The patient made a good recovery.—An ovarian tumour removed in July. The patient had been suffering great agony. The tumour was found universally adherent, and the pedicle was twisted four times on its long axis. The patient made a good recovery. She is now four months pregnant, having been sterile for ten years.

Dr. Macan showed a case of fibrous tumour removed from a patient who was sent up to Dr. Bennett for abdominal tumour. She had been two months married, and was about two months pregnant. The operation was not a difficult one, but the peritoneum became infected from the stump, and she died on the fifth day after operation.

Dr. Macan showed a multiple ovarian cystoma removed from a patient, Mrs. C., sent to him by Dr. Kidd. The chief point of interest was the great difficulty in breaking down the smaller cyst walls. This was impossible with the fingers, and forceps had to be used. There was one very firm adhesion to the transverse colon. The patient's recovery was the most perfect that he had ever witnessed.

Abdominal Section.

Dr. Macan read a paper on a case on which he had performed abdominal section three times, and removed an ovary each time. He then drew attention to the fact that a great many similar cases to this

had been explained by a separation of one ovary into two parts by some constricting band, and that Professor Winckel, in his work on the "Diseases of Women," says that no case is absolutely proved to be one in which three ovaries are present unless the three ligaments of the ovaries are also found, As his case did not fulfil this condition, he was obliged to place it in the second class, where there was a greater or less probability of three ovaries being present. The chief points of interest in the case were—1st, the performance of laparotomy three times on the same patient; 2nd, the probability of three ovaries being present; 3rd, the occurrence of a hernia in the abdominal walls, which would, in any case, have called for operative interference.

Dr. F. Kidd thought that the title of the paper was based on an assumption—as no microscopical examination of the tumour had been made at the time—nor was any description given as to where or in what manner the pedicles of these various tumours had been ligatured with reference to their attachments to the uterus. Dr. Kidd was surprised that Dr. Macan did not find that there still remained two ovaries when he operated on the so-called ovarian tumour, as most operators adopted the precaution of examining the condition of the uterus and of the ovary before closing the incision. Dr. Kidd believed that the presence of a third testicle had never been demonstrated, and there was a great analogy between the testicle in the male and the ovary in the female.

Mr. Horne wished to know if both Fallopian tubes had been removed, and thought the occurrence of menorrhagia, subsequent to the removal of two ovarian tumours, was very unique and difficult of explanation.

Dr. Bagot said that Dr. Macan had stated that this was the first case in Ireland in which a third laparotomy had been performed. He thought that it must have escaped Dr. Macan's memory that he had previously performed a third laparotomy in the case in which he mentioned that he had operated for abscess of the bladder wall. As to the method of flap-splitting the abdominal walls in operating for hernia, he had seen patients operated on by this method by its originator, Dr. Hänger, in Leipzig; it was certainly the best method he knew of.

Fæcal Fistula.

Dr. W. J. Smyly said this fistula was the result of coitus, and passed through the navicular fossa upwards and backwards into the rectum. The case was cured by dividing the perinæum, and thus splitting flaps on the lateral walls and uniting them by continuous catgut suture. The accident is one of extreme rarity.

Dr. Mason said a patient had recently been in the Coombe Hospital who had been locked into a room by a man who had forcible connection with her. She lost an enormous quantity of blood, and when admitted to hospital the post fornix of the vagina was found to be torn transversely;

the rectum was uninjured, and though she lost a very large quantity of blood she made a good recovery, the vagina being kept clean by frequent injections.

SECTION OF ANATOMY AND PHYSIOLOGY.

President—Prof. Purser, M.D.
Sectional Secretary—Prof. Birmingham, M.B.

Friday, January 9, 1891.

The President in the Chair.

Exhibitions.

(1) Professor Cunningham exhibited models illustrating cerebral anatomy of men and the anthropoid apes.

(2) Professor Birmingham—(*a*) A largely developed and ossified hyoid arch, in which the condition of the hyoid apparatus in the dog and some other carnivora was reproduced. (*b*) A specimen of persistent left superior cava, in which the usual arrangement of the azygos veins was reversed. Prof. Cunningham inquired as to the arrangement of the cardinal veins.

Series of Human Fibulæ.

Professor Bennett exhibited a series of human fibulæ, showing the great range of variation which appears to be common in the mode of articulation of this bone with the tibial condyle. Having noticed the fact that even the fracture of the upper part of the fibula, resulting from strain of the ankle-joint, had been unknown until demonstrated by the collection contained in the Museum of Trinity College, he showed examples of complete absence of any superior tibio-fibular joint in consequence of the failure of the fibula to reach up to the tibial condyle. He admitted the incomplete character of the communication, as he had no details of a complete dissection to submit, but he brought the specimens forward in the hope that a knowledge of their existence would lead to the discovery of recent dissections.

Prof. Cunningham, as one strongly interested in the welfare of the Section of Anatomy and Physiology, welcomed Dr. Bennett's paper. Dr. Bennett stands pre-eminent in Dublin in all questions relating to bones. Dr. Cunningham alluded to the fact that in vertebrates there appears to be a tendency to the entire disappearance of the fibula. He discussed the functions of the bone, and held that the lower end, in its relation to the ankle-joint, is of vastly greater importance in man than the upper. The mode of ossification shows this. The downward shrinking of the

fibula might be regarded as a tendency towards the disappearance of the least useful part of the bone.

Professor Birmingham wished also to welcome Prof. Bennett to the Anatomical Section. An undoubted use of the fibula in man was to prevent lateral displacement of the astragalus at the ankle-joint. This it could do effectually only if it had actual contact with the tibia at its upper end. Its length gave it great leverage and power at the malleolus. In one of Prof. Bennett's specimens the articulation of the head was absent, but a little way down a strong exostosis connected the bone with the tibia; this possibly was compensatory. In the present condition of the lower end of the bone the upper articulation could not be well spared.

Dr. W. H. Thompson stated that he had observed a distinct interval between the tibia and fibula at their upper extremities within a normal capsule and synovial membrane, and considered that in many cases that was the condition present. He also had seen fibulæ with two lateral facets, both cartilage-covered, one on the superior and one on the lateral aspect of the head, and had noted many intermediate conditions between the normal and some of the more marked that Dr. Bennett had shown.

Prof. Bennett replied, saying that he had to thank the Section for the reception given to his paper. He had, in introducing his paper, strictly limited its scope to human anatomy, and so had avoided going into the question of comparative anatomy connected with it. In regard to Dr. Thompson's mention of the condition of double contact of the upper end of the fibula with the tibia, one of his specimens showed two distinct articulations separated by a wide rough surface. His object, he hoped, had been obtained—namely, to direct attention to the meagre and imperfect account of the upper end of the fibula in our standard text-books of descriptive anatomy.

Anatomy of the Mastoid Region with Guides for Operating.

Prof. Birmingham read a paper on the above subject. [It will be found at page 116.]

Professor Bennett said:—Since reading Professor Birmingham's paper, already published, I have tested his method on the dead body, and have found the practical value of his rules to be amply proved.

I have also found that in working with a $\frac{1}{4}$-inch American drill no fear need be entertained of plunging into the brain or sinus, for the drill being cone-shaped at its cutting end enters the sinus with its point, and its entry can be readily appreciated. It has never plunged with me even into the mastoid cavity. I have seen in the living the mastoid trephined over the cells, as they are called, without result, simply because the incision failed to open them at all.

I may state, from the knowledge I possess from the possession of specimens, that the spontaneous opening of abscess through the bone

from the antrum outwards is placed in the position indicated by Professor Birmingham.

Dr. Thompson inquired if Professor Birmingham had noted any differences on the two sides in the nearness of approach of the sinus to the meatus, seeing that, as a rule, the sinus is much larger on the right side than on the left.

Professor Cunningham asked if any relation had been found between the cephalic index and the condition of the region concerned.

Professor Birmingham, in reply, said that he had, in the beginning, taken note of the points referred to by Dr. Thompson, but he dropped the matter, as it was not averages but extreme limits which were required. Observations had lately been made upon the condition of the parts in skulls of different types, with the result that a tolerably definite relation was found to exist between the cephalic index and the condition of the mastoid region.

The Sylvian Region of the Brain.

Prof. Cunningham commenced his paper upon "The Sylvian Region of the Brain," but the time at his disposal was so limited that he was obliged to bring his remarks to an end after he had briefly mentioned some facts concerning the development of the fossa and its surrounding opercula.

SECTION OF PATHOLOGY.

President—E. H. Bennett, M.D.
Sectional Secretary—J. B. Story, F.R.C.S.I.

Friday, January 16, 1891.

The President in the Chair.

Fibro-glandular Hyperplasia of Prostate.

Mr. Patteson showed portions of an enlarged prostate removed by supra-pubic cystotomy by Mr. Tobin in St. Vincent's Hospital. The patient, who was sixty years of age, had suffered great distress for many years. On opening the bladder three large, hard outgrowths from the median portion of the prostate were found, completely blocking the urinary outlet. They were situated closely together on broad bases of attachment. They were removed with a wire écraseur, and the patient made an excellent recovery, with relief from all his more distressing symptoms.

The parts removed were irregular in shape, the largest almost round, its transverse measurements being $3{\cdot}5 \times 3$ cm.; the next largest more quadrilateral in shape, $4 \times 3{\cdot}2 \times 1{\cdot}5$ cm. in its different diameters. The

three together weighed at time of removal 10 drachms. The surfaces were for the most part smooth, in spots somewhat irregular and nodular. They showed a firm surface on section. Microscopic examination showed a marked increase in the number and size of the glandular acini, the growth in parts bearing a striking resemblance to the earlier stages of ovarian adeno-cystomata. In other parts the fibrous and muscular elements had developed at the expense of the glandular, the fibrous hyperplasia being, however, the most prominent feature. The epithelium lining the acini was of columnar type in general, but in some of the cystic portions of the tumour, where active proliferation was taking place, the epithelial lining was composed of several rows of irregularly-shaped cells, the basement layer alone showing a distinct columnar shape. Having regard to the excessive glandular formation shown in many parts, quite out of proportion to the growth of the fibro-muscular stroma, it seems justifiable to class this tumour as a fibro-glandular hyperplasia of the gland, constituting the *prostatic adenoma* of some Continental pathologists.

Encephaloid Carcinoma of Skin of Thigh with Lymphatic Infiltration.

Dr. M'Weeney exhibited naked-eye specimens and microscopic slides, which appeared to him to exemplify this unusual condition. The naked-eye specimens consisted of the tumour itself, of infiltrated lymphatic glands from the groin, and of remarkably hypertrophied lymph vessels which connected the tumour with the glands. All these had been removed about six weeks previously by his senior colleague, Mr. P. J. Hayes, at the Mater Misericordiæ Hospital, from a woman, aged about forty-five. The tumour occupied a point about six inches below Poupart's ligament, on the antero-external aspect of the right thigh. It had been first noticed about six months before removal. At the time of operation it was circular in outline, about the size of a hen's egg, but considerably flattened, and distinctly pedunculated, in the sense, at least, that it was constricted at its junction with the surrounding skin. Its colour was red and its surface raw and eruptive. Microscopically, it presented none of the characters of an epithelioma in the usual acceptation of the term. There were no solid, column-like, or nipple-shaped epithelial down-growths, no cell-nests, no apparent connection with the *rete Malpighii*. The tumour consisted of large, roundish, or irregular epithelial cells and a fibrous stroma, in the mostly elongated meshes of which the cells lay closely packed. The entire tumour was lobulated on section, large masses of neoplastic tissue, possessing the structure just described, being separated by distinct thick bands of connective tissue, between the fibrous strands of which, around the periphery of each cancerous lobule, were numerous small areas of small cell infiltration. On examination with high powers, the sections (which had been stained with Delafield's

hæmatoxylin and Orth's picro-lithio-carmine respectively) displayed quite distinctly the very delicate stroma in the alveoli of which the cancer cells lay in oblong groups. The entire structure bore a close resemblance to rapidly growing encephaloid, such as is occasionally to be met with in sections from the periphery of acute carcinoma of the mammary gland. So far as the exhibitor's knowledge of the text-books went, they described two forms of carcinomatous process in the skin, besides squamous-cell epithelioma—viz., sweat gland and sebaceous gland cancer. In the former, according to Birch-Hirschfeld, traces of the tubular structure would usually be found. There were none such, however, in any of the sections of the present tumour, and Dr. M'Weeney was uncertain whether the origin of the neoplasm ought to be ascribed to the epithelium of the sebaceous follicles. No trace of any typical structure was to be found which might serve as a guide to the starting point of the proliferating mass. The lymph glands examined presented the same appearances; in the central parts of the sections the atrophic remains of the lymphoid tissue was still to be seen. As regards the lymphatic vessels, the remarkable hypertrophy (the calibre equalled that of thick whip-cord) was found on microscopic examination to be due, not as was at first expected, to carcinomatous infiltration, but simply to chronic fibrous induration of remarkable density and cellular sparseness. Not a cancer-cell was visible, and the lumen, though narrow, was perfectly clear. In conclusion, he desired to exhibit a section stained by Russell's method, with a view to the demonstration of the *fuchsin bodies*, lately described by that observer. Numerous granules, corresponding in size and general appearance with those in question were found, but the colour reaction had not been successful, as they had, without exception, taken on the iodine-green coloration.

The PRESIDENT, in asking the members to discuss the communication, noticed with pleasure the abandonment of the title of the communication by Dr. M'Weeney. The appearances of the tumour were certainly not those of an ordinary or indeed any epithelioma of the skin. He asked for some clinical details of the case.

Remarkable Enterolith.

MR. MYLES showed a remarkable enterolith, and gave details of a case in which symptoms of complete intestinal obstruction were produced by it. The patient was a lady sixty-five years old, and suffered fifteen years before from hepatic colic, and since then from chronic constipation. This culminated in an attack of complete obstruction necessitating relief by operation. Mr. Myles, assisted by Dr. O'Connor, of Clane, Co. Kildare, in whose charge the patient had previously been, performed laparotomy, and on searching for the cause of obstruction found the gut completely blocked by the calculus lodged in the ileum, the part above distended.

and that below completely collapsed, the calculus fixed and immovable. Mr. Myles then discussed the possible origin of the calculus and the different ways in which it might have acted so as to cause complete obstruction.

The PRESIDENT regretted that a section had not been made of the calculus, as such would have at once answered the question of its origin. This want, which could easily be supplied, detracted but little from the great clinical interest of the specimen.

Marjolin's Ulcer.

DR. J. K. BARTON exhibited a specimen of Marjolin's ulcer.

The Section adjourned.

RESPIRATORY FAILURE UNDER CHLOROFORM.

THOMAS MANLEY, M.D., describes a case (*Medical News*, Philadelphia, Oct. 4, 1890) of death from chloroform administered in a case of fracture of the skull, in which trephining was indicated, in which the respiratory centres yielded first. "The patient ceased to breathe; his features were black and bloated; he foamed at the mouth; the eyes bulged, and plainly he was asphyxiated. Feeling for the radial pulse, I was amazed to find it full, slow, and regular—about 60 to the minute." Artificial respiration re-established breathing for a time, but it finally ceased in about five minutes, and in two minutes afterwards the pulse had ceased. The condition of the brain was noticed through the trephine hole; with dyspnœa and apnœa the brain tissue swelled up; the vessels were enormously distended, and of a deep black colour. With partial return of respiration the brain gradually receded and the vessels returned to their normal size and colour.

INFLUENCE OF MENSTRUATION ON THE COURSE OF PHTHISIS.

DR. KARL VON RUCK (*Medical News*, Philadelphia, 13th Sept., 1890) considers that female patients are apt to lose ground during the menstrual week, and this often in the absence of any special disturbance of their menstrual function. Fever, if absent, is apt to return, and if fever is present it is several degrees higher for a day or two immediately preceding the menstrual flow. If the period is entirely missed, or is delayed, the increased temperature has often been observed to continue throughout the time corresponding to the menstrual week. In addition, increased cough, diminished appetite, and digestive disturbances are frequent, and a loss of several pounds in weight has been noticed in a number of cases who had been gaining.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F. R. Met. Soc.; Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, December 27, 1890.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Dec. 6.	Dec. 13.	Dec. 20.	Dec. 27.		Dec. 6.	Dec. 13.	Dec. 20.	Dec. 27.
Armagh -	10·3	20·7	10·3	20·7	Limerick -	24·3	21·6	29·7	17·5
Belfast -	26·7	24·5	25·8	28·3	Lisburn -	14·5	14·5	58·0	24·2
Cork -	20·8	19·5	26·0	8·4	Londonderry	10·7	30·3	17·8	12·5
Drogheda	21·1	12·7	16·9	16·9	Lurgan -	51·3	25·7	46·2	10·3
Dublin -	29·2	25·0	26·7	30·6	Newry -	17·6	17·6	17·6	10·5
Dundalk -	4·4	8·7	30·6	4·4	Sligo -	14·4	38·5	38·5	24·1
Galway -	26·9	40·3	23·5	13·4	Waterford -	25·5	23·2	41·7	27·8
Kilkenny	8·5	21·1	33·8	12·7	Wexford -	29·9	17·1	17·1	21·4

In the week ending Saturday, December 6, 1890, the mortality in twenty-eight large English towns, including London (in which the rate was 20·4), was equal to an average annual death-rate of 21·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·1 per 1,000. In Glasgow the rate was 23·3, and in Edinburgh it was 18·2.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 25·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·1 per 1,000, the rates varying from 0·0 in Newry, Kilkenny, Drogheda, Dundalk, Lisburn, and Armagh, to 10·3 in Lurgan—the 10 deaths from all causes registered in the last-named district comprising 1 from whooping-cough and 1 from diarrhœa. Among the 119 deaths from all causes registered in Belfast are 1 from

scarlatina, 3 from whooping-cough, 3 from diphtheria, 2 from enteric fever, and 6 from diarrhœa.

In the Dublin Registration District the registered births amounted to 139—64 boys and 75 girls; and the registered deaths to 201—92 males and 109 females.

The deaths, which are 3 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 29·7 in every 1,000 of the estimated population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 29·2 per 1,000. During the forty-nine weeks ending with Saturday, December 6, the death-rate averaged 25·9, and was 2·1 under the mean rate in the corresponding period of the ten years 1880–89.

Only 13 deaths from zymotic diseases were registered, being 12 below the average for the corresponding week of the last ten years, and 6 under the number for the week ended November 29. They comprise 4 from whooping-cough, 4 from enteric fever, 2 from diarrhœa, and 1 from dysentery.

Twenty cases of enteric fever were admitted to hospital, being 2 over the admissions for the preceding week. Eighteen enteric fever patients were discharged, 2 died, and 96 remained under treatment on Saturday, being equal to the number in hospital at the close of the preceding week.

Only 2 cases of typhus were admitted to hospital, being a decline of 6 as compared with the number admitted during the preceding week. One patient was discharged, and 24 cases remained under treatment on Saturday, being 1 over the number in hospital on Saturday, November 29.

The hospital admissions for the week include, also, 3 cases of measles.

Forty-nine deaths from diseases of the respiratory system were registered, being 17 in excess of the number for the preceding week, but 1 under the average for the 49th week of the last ten years. They comprise 27 from bronchitis and 10 from pneumonia or inflammation of the lungs.

In the week ending Saturday, December 13, the mortality in twenty-eight large English towns, including London (in which the rate was 21·1), was equal to an average annual death-rate of 21·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·1 per 1,000. In Glasgow the rate was 22·4, and in Edinburgh it was 18·6.

The average annual death-rate in the sixteen principal town districts of Ireland was 23·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·7 per 1,000, the rates varying from 0·0 in Kilkenny, Drogheda, Sligo, Lurgan, and Armagh, to 7·0 in Newry—

the 5 deaths from all causes registered in the last-named district comprising 2 from diarrhœa. Among the 109 deaths from all causes registered in Belfast are 2 from scarlatina, 3 from whooping-cough, 1 from enteric fever, and 3 from diarrhœa.

In the Dublin Registration District the registered births amounted to 203—114 boys and 89 girls; and the registered deaths to 173—95 males and 78 females.

The deaths, which are 39 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·5 in every 1,000 of the estimated population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 25·0 per 1,000. During the fifty weeks ending with Saturday, December 13, the death-rate averaged 25·9, and was 2·2 under the mean rate in the corresponding period of the ten years 1880-89.

Sixteen deaths from zymotic diseases were registered, being 3 over the low number for the preceding week, but 10 under the average for the 50th week of the last ten years. They comprise 2 from influenza, 4 from whooping-cough, 1 from ill-defined fever, 4 from enteric fever, and 1 from dysentery. In both of the cases of death from influenza the disease was complicated with broncho-pneumonia.

The number of cases of enteric fever admitted to hospital during the week is 18, being a decline of 2 as compared with the admissions for the preceding week. Seventeen enteric fever patients were discharged, and 97 remained under treatment on Saturday, being 1 over the number in hospital at the close of the preceding week.

Four cases of typhus were admitted to hospital, being 2 over the admissions for the preceding week, but 4 under the number for the week ended November 29. Six patients were discharged, and 22 remained under treatment on Saturday, being 2 under the number in hospital on Saturday, December 6.

In each of the last three weeks, 3 cases of measles were admitted to hospital. Ten cases of the disease remained under treatment in hospital at the close of this week.

The number of deaths from diseases of the respiratory system registered is 42, being 13 under the average for the corresponding week of the last ten years, and 7 under the number for the week ended December 6. The 42 deaths comprise 29 from bronchitis and 9 from pneumonia or inflammation of the lungs.

In the week ending Saturday, December 20, the mortality in twenty-eight large English towns, including London (in which the rate was 25·9), was equal to an average annual death-rate of 25·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·9

per 1,000. In Glasgow the rate was 24·4, and in Edinburgh it was also 24·4.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 26·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·6 per 1,000, the rates varying from 0·0 in nine of the districts to 5·4 in Limerick—the 22 deaths from all causes registered in that district comprising 2 from typhus, 1 from enteric fever, and 1 from diarrhœa. Among the 115 deaths registered in Belfast are 3 from whooping-cough, 1 from simple continued fever, 4 from enteric fever, and 2 from diarrhœa. The 40 deaths in Cork comprise 1 from diphtheria, 2 from enteric fever, and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 170—78 boys and 92 girls; and the registered deaths to 191—90 males and 101 females.

The deaths, which are 20 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·2 in every 1,000 of the estimated population. Omitting the deaths (numbering 10) of persons admitted into public institutions from localities outside the district, the rate was 26·7 per 1,000. During the fifty-one weeks ending with Saturday, December 20, the death-rate averaged 26·0, and was 2·1 under the mean rate in the corresponding period of the ten years 1880–89.

Only 15 deaths from zymotic diseases were registered, being 1 under the low number for the preceding week and 10 below the average for the 51st week of the last ten years. They comprise 1 from scarlet fever (scarlatina), 1 from whooping-cough, 1 from diphtheria, 4 from enteric fever, 2 from diarrhœa, and 1 from erysipelas.

Eighteen cases of enteric fever were admitted to hospital, being equal to the admissions for the preceding week. Twenty-six enteric fever patients were discharged, 2 died, and 87 remained under treatment on Saturday, being 10 under the number in hospital on Saturday, December 13.

Four cases of typhus were admitted to hospital, being equal to the admissions for the preceding week. Four patients were discharged, and 22 remained under treatment on Saturday, being equal to the number in hospital at the close of the previous week.

Three cases of measles were admitted to hospital, being equal to the number of admissions for each of the three weeks preceding. Eleven cases of measles remained under treatment in hospital on Saturday.

Forty-two deaths from diseases of the respiratory system were registered, being equal to the number for the preceding week, but 7 under the average for the 51st week of the last ten years. They comprise 36 from bronchitis and 5 from pneumonia or inflammation of the lungs.

In the week ending Saturday, December 27, the mortality in twenty-eight large English towns, including London (in which the rate was 26·3), was equal to an average annual death-rate of 27·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24·6 per 1,000. In Glasgow the rate was 29·1, and in Edinburgh it was 20·1.

The average annual death-rate in the sixteen principal town districts of Ireland was 24·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·5 per 1,000, the rates varying from 0·0 in twelve of the districts to 3·4 in Galway—the 4 deaths from all causes registered in that district comprising 1 from whooping-cough. Among the 126 deaths from all causes registered in Belfast are 1 from scarlatina, 1 from typhus, 1 from whooping-cough, 7 from enteric fever, and 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 98—56 boys and 42 girls; and the registered deaths to 212—105 males and 107 females.

The deaths, which are equal to the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 31·3 in every 1,000 of the estimated population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 30·6 per 1,000. During the fifty-two weeks ending with Saturday, December 27, 1890, the death-rate averaged 26·1, and was 2·1 under the mean rate for the ten years 1880–89.

Sixteen deaths from zymotic diseases were registered, being 1 over the low number for the preceding week, but 10 under the average for the 52nd week of the last ten years. They comprise 1 from typhus, 1 from influenza, 4 from whooping-cough, 1 from simple continued fever, 4 from enteric fever, and 1 from diarrhœa.

Only 11 cases of enteric fever were admitted to hospital, against 18 admissions in each of the two weeks preceding. Sixteen enteric fever patients were discharged, and 82 remained under treatment on Saturday, being 5 under the number in hospital on Saturday, December 20.

Only 2 cases of typhus were admitted, being 2 under the admissions for each of the two weeks preceding. Six typhus patients were discharged and 18 remained under treatment on Saturday, being 4 under the number in hospital at the close of the preceding week.

Four cases of measles were admitted to hospital, against 3 in each of the four weeks preceding. Twelve cases of measles remained under treatment in hospital on Saturday.

Sixty-five deaths from diseases of the respiratory system were registered, being 12 in excess of the average for the corresponding week of the last ten years, and 23 over the number in the week ended December 20.

They comprise 45 from bronchitis, 10 from pneumonia or inflammation of the lungs, and 2 from pleurisy.

Vital Statistics

For the Week ending Saturday, January 3, 1891.

The deaths registered in the fifty-third week of 1890 in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Armagh, 25·8; Belfast, 32·3; Cork, 42·2; Drogheda, 25·4; Dublin, 39·9; Dundalk, 21·8; Galway, 30·3; Kilkenny, 38·1; Limerick, 33·7; Lisburn, 19·3; Londonderry, 23·2; Lurgan, 51·3; Newry, 35·1; Sligo, 48·1; Waterford, 37·0; Wexford, 21·4.

In the week under discussion, ending Saturday, January 3, 1891, the mortality in twenty-eight large English towns, including London (in which the rate was 29·7), was equal to an average annual death-rate of 28·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24·8 per 1,000. In Glasgow the rate was 30·2, and in Edinburgh it was 22·4.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 36·1 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in ten of the districts to 8·6 in Wexford—the 5 deaths from all causes registered in that district comprising 2 from whooping-cough. Among the 144 deaths from all causes registered in Belfast are 5 from whooping-cough, 1 from diphtheria, 4 from enteric fever, and 5 from diarrhœa.

In the Dublin Registration District the registered births amounted to 245—127 boys and 118 girls; and the registered deaths to 275—125 males and 150 females.

The deaths, which are 63 over the average number for the fifty-second week of the last ten years, represent an annual rate of mortality of 40·6 in every 1,000 of the estimated population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 39·9 per 1,000. During the fifty-three weeks ending Saturday, January 3, 1891, the death-rate averaged 26·3, and was 1·9 under the mean rate for the ten years 1880–89.

The number of registered deaths from zymotic diseases is 16, being 10 below the average for the fifty-second week of the last ten years, and equal to the number for the previous week. The 16 deaths comprise 2 from measles, 2 from whooping-cough, and 7 from enteric fever.

Only 5 cases of enteric fever were admitted to hospital, being 6 under the admissions for the week ended December 27, and 13 under the number for each of the two weeks preceding. Fifteen enteric fever patients were discharged, 2 died, and 70 remained under treatment on Saturday, January 3, being 12 under the number in hospital on Saturday, December 27.

Five cases of typhus were admitted to hospital, but the admissions for the week did not include any cases of either scarlatina or measles. Seven typhus patients were discharged, and 16 remained under treatment on Saturday, January 3, being 2 under the number in hospital at the close of the preceding week.

Eighty-seven deaths from diseases of the respiratory system were registered, being 34 in excess of the average for the 52nd week of the ten years 1880–89, and 22 over the number for the week ended December 27. They comprise 61 from bronchitis and 23 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of December, 1890.

Mean Height of Barometer,	30·025 inches.
Maximal Height of Barometer (on 26th, at 9 a.m.),	30·454 „
Minimal Height of Barometer (on 18th, at 9 p.m.),	29·185 „
Mean Dry-bulb Temperature,	38·9°.
Mean Wet-bulb Temperature,	36·9°.
Mean Dew-point Temperature,	34·0°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·200 inch.
Mean Humidity,	83·4 per cent.
Highest Temperature in Shade (on 1st),	53·9°.
Lowest Temperature in Shade (on 21st),	24·1°.
Lowest Temperature on Grass (Radiation) (on 21st),	20·1°.
Mean Amount of Cloud,	76·3 per cent.
Rainfall (on 11 days),	1·856 inches.
Greatest Daily Rainfall (on 2nd),	·597 inch.
General Directions of Wind,	E., S.E.

Remarks.

A very cold, dull, foggy month, with much cloud (76·3 per cent.) and prevalent easterly winds (that is, winds from points between S.E. and N.E.). These conditions were determined by the persistence of an anticyclone to the eastward and north-eastward, while areas of low pressure occasionally skirted the western shores of Ireland, Scotland and Norway in their passage northeastwards across the Atlantic Ocean and the Nor-

wegian Sea. In central and south-eastern England intense frost was felt almost throughout the month, while the weather was at times open in Ireland and Scotland.

In Dublin the arithmetical mean temperature (39·2°) was decidedly below the average (41·3°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 38·9°. In the twenty-five years ending with 1889, December was coldest in 1878 (M. T. = 32·8°), and in 1874 (M. T. = 36·8°), and warmest in 1865 (M. T. = 46·2°). In 1886 the M. T. was as low as 37·9°; in the year 1879 (the "cold year"), it was also 37·9°. In 1887 the M. T. was 39·9°; in 1888 it was 43·6°, and in 1889 it was 43·8°.

The mean height of the barometer was 30·025 inches, or 0·150 inch above the average value for December—namely, 29·875 inches. The mercury rose to 30·454 inches at 9 a.m. of the 26th, and fell to 29·185 inches at 9 p.m. of the 18th. The observed range of atmospherical pressure was, therefore, 1·269 inches—that is, a little more than one inch and a quarter.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 38·9°, or 5·4° below the value for November, and 12·0° below that for October, 1890. Using the formula, *Mean Temp.* = *Min.* + (*max.*—*min.* × 52), the value was 39·3°, or 2·2° below the average mean temperature for December, calculated in the same way, in the twenty-five years, 1865–89, inclusive (41·5°). The arithmetical mean of the maximal and minimal readings was 39·2°, compared with a twenty-five years' average of 41·3°. On the 1st the thermometer in the screen rose to 53·9°—wind, S.W.; on the 21st the temperature fell to 24·1°—wind, calm. The minimum on the grass was 20·1° also on the 21st. There were 8 days of frost in the screen and 23 days of frost on the grass.

The rainfall was 1·856 inches, distributed over 11 days. The average rainfall for December in the twenty-five years, 1865–89, inclusive, was 2·404 inches, and the average number of rainy days was 16·9. The rainfall, therefore, was decidedly below the average, while the rainy days were also much below it. In 1876 the rainfall in December was very large—7·566 inches on 22 days. In 1872, 4·932 inches fell on as many as 24 days; and in 1868 (which was otherwise a fine and dry year), 4·749 inches fell on as many as 27 days. On the other hand, in 1867, only ·771 of an inch was measured on 13 days; and in 1871 the December rainfall was only ·797 of an inch on 15 days. In 1885, only ·742 of an inch of rain was measured on but 10 days, but in 1886 the rainfall was 3·348 inches, distributed over as many as 21 days. In 1887 ("the dry year"), the rainfall was 1·223 inches on 19 days; in 1888, it was 2·911 inches on 17 days, and in 1889, 1·554 inches fell on 15 days.

A lunar halo appeared on the 21st. High winds were noted on 10

days, but attained the force of a gale on only 2 occasions—the 18th and the 30th. The atmosphere was more or less foggy in Dublin on the 1st, 2nd, 8th, 9th, 10th, 19th, 20th, 21st, 24th, and 26th. Snow or sleet fell on the 19th, 27th, and 31st. Hail fell on the 7th, 26th, 27th, 29th, 30th, and 31st.

While the weather remained cold on the Continent and in the S.E., E., and centre of England, a spell of damp warmth was felt in Ireland, Scotland, Wales, and the N. of England in the earlier part of the period ending Saturday, the 6th. This was followed by keen easterly winds and lower temperatures generally after Tuesday, the 2nd. On Monday, the 1st, a warm S.W. current swept over Ireland, Scotland, and Scandinavia round a depression near Bodö, in Norway, where the barometer was as low as 28·97 inches. On this day, temperature rose to 53·9° in Dublin and to 57° at Nairn and Leith. The barometer now rose in the N. and fell in the S., a heavy downpour of rain occurred, and an easterly current took the place of the warm S.W. winds. The last three days were dry and bleak. The corrected mean temperature was 45·4°. The mean of the dry bulb readings at 9 a.m. and 9 p.m. was 45·0°. The screened thermometers rose to 53·9° on Monday. The rainfall was 1·182 inches on four days. Of this amount, ·597 inch was registered on Tuesday. The wind was at first S.W., then calm, and finally N.E. to E.

Throughout the second week (7th–13th) an anticyclone lay over the North Sea, Denmark, and the Southern part of the Scandinavian Peninsula, affecting Germany, France, and England to a less extent. Depressions of no great depth were found over the Iberian Peninsula, and—on Wednesday and Thursday, the 10th and 11th—off the western coasts of Ireland and Scotland also. These barometrical conditions determined the weather of the week. Continuous hard frost held in Germany, Belgium, and the greater part of France. Cold weather and dense fogs prevailed in England; while it was milder—especially on Wednesday and Thursday—in Ireland and Scotland. On these days also considerable quantities of rain fell at most of the Irish stations. In Dublin the fall was only just perceptible—·002 inch on Thursday. The mean height of the barometer was 30·042 inches. The corrected mean temperature was 39·3°—the mean of the dry bulb readings at 9 a.m. and 9 p.m. being 38·9°. The rainfall was only ·002 inch on Thursday. The prevailing wind was S.E., but from time to time the air was calm, with smoke fog over the city.

Exceptionally severe weather continued to prevail during the week ended Saturday, the 20th, in Germany, France, and the greater part of England. In Ireland and Scotland the cold was less intense, but still considerable, especially towards the close of the period. At 8 a.m. of Sunday the thermometer read 14° at Loughborough, 16° at Oxford, 18° at Cambridge, and 19° in London. It was 39° in Dublin at the same

time. At night a shallow depression formed over the British Islands, and the wind shifted from S.W. to N.W. and N.E. in Ireland, with some cold showers on Monday, rain in Scotland, and snow in most parts of England. On Thursday a deep V-shaped depression advanced over Ireland from the Atlantic, and caused a S.E. to S. gale, with heavy rain and sleet or snow at night. The wind shifted to N.W. in the rear of this system on Friday, when the sky cleared and frost set in with haze and fog in Dublin. Meanwhile heavy falls of snow occurred in England, after which the frost stiffened again, and winter seemed fully established as the week drew to a close. In Dublin the mean height of the barometer was 29·771 inches, pressure falling to 29·185 inches at 9 p.m. of Thursday (wind, S.S.E., a gale). The corrected mean temperature was 37·5°; the mean dry bulb temperature at 9 a.m. and 9 p.m. was 36·9°. The rainfall was ·382 inch, on two days—·358 inch falling as rain and sleet on the night of the 18th—19th, when the record at Knockdolian, Greystones, Co. Wicklow, was ·850 inch, and that at Easton Lodge, Monkstown, Co. Dublin, was ·600 inch."

The fourth was another week of inclement weather—interrupted in Ireland and Scotland by a spell of milder conditions on Monday and Tuesday, the 22nd and 23rd. The week opened with severe frost in parts of Great Britain and Ireland, the lowest temperatures at 8 a.m. of Sunday being 14° at Loughborough, 16° at York, 20° at Parsonstown, 23° at Cambridge, and 24° at Aberdeen, Liverpool, and Dublin. In and about the last-named city there was a thick and beautiful rime, and it froze all day. Towards evening a depression, edging in from the west, brought a southerly wind and higher temperature. At 5 30 p.m. a lunar halo was visible. Next day was mild and dull in Ireland—the thermometer marking 40° at Parsonstown at 8 a.m., or 20° higher than 24 hours previously. In England, however, the cold was on this day intense, among the 8 a.m. readings being these—Cambridge, 4°; Oxford, 9°; Loughborough, 10°; London, 15°; and York, 16°. On Tuesday, temperature again gave way in Ireland, but rose in England, although no decided thaw occurred. In Dublin Christmas Eve was frosty, calm, and foggy, but Christmas Day was dull and rainy at first; afterwards there was clear moonlight, followed by slight frost. Hail, graupel, and snow fell in heavy showers on Saturday, when there was a fresh breeze from E.N.E. to S.E. In Dublin the mean height of the barometer was 30·234 inches, pressure rising to 30·454 inches at 9 a.m. of Friday (wind, N.W.). The corrected mean temperature was 37·4°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 36·9°. The screened thermometers rose to 47·5° on Tuesday, having fallen to 24·1° on Sunday. The precipitation amounted to ·239 inch on four days, ·110 inch being registered on Friday. The wind was variable, and for the most part light.

Very cold, dry, and piercing easterly winds prevailed during the last four days of the month—culminating in a severe gale on the 30th, after which there was a fall of hail, snow, and soft hail (graupel). A thaw set in on the evening of the 31st.

The rainfall in Dublin during the year ending December 31st has amounted to 27·562 inches on 200 days, compared with 27·272 inches on 193 days in 1889, 28·679 inches on 190 days in 1888, 16·601 inches on 160 days in 1887, and a twenty-five years' average of 27·696 inches on 194·3 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in December, 1890, was 2·785 inches distributed over 14 days. Of this quantity ·780 of an inch fell on the 2nd, and ·850 of an inch on the 18th.

Rainfall in 1890,

At 40 Fitzwilliam-square, West, Dublin.

Rain Gauge:—Diameter of funnel, 8 in. Height of top—Above ground 3 ft. 2 in.; above sea level, 50 ft.

Month	Total Depth	Greatest Fall in 24 Hours.		Number of Days on which ·01 or more fell
	Inches	Depth	Date	
January, - - -	2·975	·843	26th	21
February, - - -	·802	·278	16th	7
March - - -	3·693	·976	24th	17
April, - - -	1·575	·439	15th	14
May, - - -	2·438	·456	3rd	17
June, - - -	1·930	·362	11th	18
July, - - -	2·174	·376	25th	24
August, - - -	2·799	·851	22nd	19
September, - - -	2·469	·878	20th	14
October, - - -	·639	·164	25th	11
November, - - -	4·212	·625	10th	27
December, - - -	1·856	·597	2nd	11
Total, - -	27·562	—	—	200

The rainfall was only ·134 of an inch in defect of the average annual measurement of the twenty-five years, 1865–89, inclusive—viz., 27·696 inches.

It will be remembered that the rainfall in 1887 was very exceptionally small—16·601 inches, the only approach to this measurement in Dublin being in 1870, when only 20·859 inches fell, and in 1884, when the measurement was 20·467 inches. In seven of the twenty-five years in question the rainfall was less than 26 inches, and in 1885 it was 26·614 inches.

The scanty rainfall in 1887 was in marked contrast to the abundant

downpour in 1886, when 32·966 inches—or as nearly as possible double the fall of 1887—fell on 220 days. Only twice since these records commenced has the rainfall in Dublin exceeded that of 1886—namely, in 1872, when 35·566 inches fell on 238 days, and in 1880, when 34·512 inches were measured on, however, only 188 days.

In 1890, there were 200 rainy days, or days upon which not less than ·01 inch of rain (one hundredth of an inch) was measured. This was in excess of the average number of rainy days, which was 194·3 in the twenty-five years, 1865–89, inclusive. In 1868—the warm dry year of recent times—as well as in 1887, the rainy days were only 160, and in 1870 they were only 145. In 1868, however, the rainfall amounted to 24·935 inches, or more than 8 inches above the measurement in 1887, and even in 1870, 20·859 inches were recorded. Included in the 200 rainy days in 1890 are 21 on which snow or sleet fell, and 28 on which there was hail. In January hail was observed on 3 days, in February once, in March on 3 days, and in April on 5 days. Hail also fell once in May, August, and October, twice in June, 5 times in November, and 6 times in December. Snow or sleet fell on 5 days in January, on 2 days in February, on 6 days in March, on 1 day in April, on 1 day in October, on 3 days in November, and on 3 days in December. Thunder occurred on four occasions during the year—on March 8th, April 26th, and June 11th and 28th. Lightning was also seen on one occasion in each of the following months—viz., May, August, September, and October.

The rainfall was distributed as follows:—7·470 inches fell on 45 days in the first quarter, 5·943 inches on 49 days in the second, 7·442 inches on 57 days in the third, and 6·707 inches on 49 days in the fourth and last quarter.

Of the 6·707 inches which fell in the fourth quarter of the year, 4·212 inches were measured in November on as many as 27 days.

J. W. Moore, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F.R. Met. Soc.

Abstract of Meteorological Observations taken at Dublin (40 Fitzwilliam-square, West) during the Year 1890.

MONTH	Abs. Max.	Date	Abs. Min.	Date	Mean Daily Max.	Mean Daily Min	Rainfall	Rainy Days	Mean Height of Barometer	Highest Pressure	Date	Lowest Pressure	Date	Prevalent Winds
	°		°		°	°	Ins.		Ins.	Ins.		Ins.		
January -	56·8	16th	31·1	29th	50·0	39·0	2·975	21	29·740	30·450	29th	28·693	23rd	S.W., W.
February -	52·5	1st	27·9	16th	45·5	37·5	·802	7	30·204	30·744	23rd	29·539	16th	S.E., E.
March - -	59·6	12th	31·2	3rd and 9th	50·6	39·5	3·693	17	29·789	30·534	12th	28·904	24th	W., S.W.
April - -	63·6	20th	31·2	3rd	53·9	40·7	1·575	14	29·842	30·302	1st	29·457	15th	N.W., E.
May - -	65·7	23rd	39·1	31st	59·2	47·2	2·438	17	29·807	30·253	22nd	29·377	10th	E., S.E.
June - -	72·0	5th	43·2	7th	64·2	51·9	1·930	18	29·944	30·375	14th	29·126	30th	S.W., W.
July - -	72·8	13th	44·4	5th	64·3	51·9	2·174	24	29·895	30·338	20th	29·396	7th	W., S.W., N.W.
August - -	74·8	4th	41·5	31st	62·9	51·5	2·799	19	29·879	30·291	31st	29·269	26th	N.W., W.
September -	71·2	7th	48·3	23rd	64·7	54·4	2·469	14	30·061	30·467	6th	29·237	20th	S.W., W., S.
October - -	65·2	5th	34·2	27th	57·2	46·1	·639	11	30·109	30·559	22nd	29·486	26th	W., N.W.
November -	63·0	19th	26·3	29th	51·1	39·5	4·212	27	29·827	30·403	19th	28·737	6th	S.W., W.
December -	53·9	1st	24·1	21st	42·6	35·7	1·856	11	30·025	30·454	26th	29·185	18th	E., S.E.
Extremes, Totals, and Means	° 74·8	Aug. 4th	° 24·1	Dec. 21st	° 55·5	° 44·6	Ins. 27·562	Days 200	Ins. 29·927	Ins. 30·744	Feb. 23rd	Ins. 28·693	Jan. 23rd	W., S.W.
					50·1°									

JOHN WILLIAM MOORE, B.A., M.D., Univ., Dubl.; F.R.C.P.I.;
F. R. Met. Soc.

January 1, 1891.

PERISCOPE.

KEANU.

The case of Keanu, the convict under sentence of death, inoculated with leprous virus by Dr. Arning, is supposed to have established the communicability of leprosy by inoculation. In the April issue of the *Occidental Medical Times* (Sacramento) appeared a short paper by Dr. Sidney Bourne Swift, Resident Physician at Molokai Leper Settlement, in which Dr. Arning's conclusion is shown to be unsustained by the facts. Dr. Arning stated that Keanu, at the time of the experiment, was in robust health, and that there were "no sign or history of syphilis or leprosy, and no history of leprosy in his family on either side, or in his children." That Keanu was inoculated with virus from a leprous subject, and that he is now a confirmed leper, are undisputed facts; but that his leprosy is a consequence of the inoculation is not established. Dr. Swift states that in the same ward with Keanu is Keanu's nephew, David, the son of his only sister, in a hopeless condition of advanced tubercular leprosy; and that his own son and his first cousin on the mother's side are both lepers. There is, therefore, a family history of leprosy. It appears, moreover, that for the first three months of Keanu's incarceration at Honolulu, "he was in charge of a turnkey named Malaihi, who is a leper at this place at this date, and, according to the latter's statement, has been a leper for 20 years. Of so little import (in my mind) is Dr. Arning's inoculation that I attribute fully as much to the possibility of Keanu contracting the disease from the turnkey."

SOUTH AMERICAN JOURNALISM.

The following is culled from an editorial paragraph in the *Southern Clinic*, of Richmond, Va.:—"Adieu, Humbug! It affords us much pleasure to announce the fact that the ignoramus who has been playing the part of surgeon to our city hospital for the past two years has been pitched overboard at last. If there ever was an outrage committed upon the sick paupers of Richmond, it was when the above-mentioned dotard was placed in charge of them."

COCAÏN AND ANTIPYRIN COMBINED FOR LOCAL ANÆSTHESIA.

Dr. Steever (*Medical News*, Philadelphia, Sept. 6, 1890) uses a solution containing 5 per cent. cocaïn and 15 per cent. antipyrin as a local anæsthetic in minor surgical operations. In extracting teeth he applies it to the gums for about fifteen minutes, and sprays the region of the external auditory meatus with ether.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

MARCH 2, 1891.

PART I.

ORIGINAL COMMUNICATIONS.

ART. VII.—*Professor Koch's Treatment of Pulmonary Tuberculosis.*[a] By C. J. NIXON, M.D. (Hon. Causâ), R.U.I.; M.B., LL.D., Univ. Dubl.; Senior Physician to the Mater Misericordiæ Hospital; Professor of Medicine, Catholic University.

I DESIRE to bring under the notice of the Academy of Medicine some of the reasons which induced Professor Koch to employ the method which bears his name for the treatment of pulmonary phthisis, reviewing briefly the results of that treatment, as well as pointing out some objections which may be urged against it.

There are three specific statements made by Professor Koch in his original communication on the treatment of tubercular disease. They are as follow:—

(1) Within four to six weeks patients under treatment for the first stage of phthisis were all free from every symptom of disease, and could be pronounced cured.

(2) Patients with cavities not too highly developed improved considerably, and were almost cured.

(3) Only in those whose lungs contained many large cavities could no improvement be found objectively, though even in those cases the expectoration decreased, and the subjective condition improved.

[a] Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, January 30, 1891. [For the discussion on this paper, see page 262.]

"These experiences," adds Professor Koch, "lead me to suppose that phthisis, in the beginning, can be cured with certainty by the remedy."

[It will be observed that I am dealing solely with pulmonary tuberculosis—the other forms of tuberculosis having been fully discussed in the Surgical Section of the Academy of Medicine.]

How have these three specific statements been borne out by results?

I have not myself met with, either in Berlin or at home, a single case of phthisis in which a cure has been effected. In some of the cases under my own care in hospital, representing the disease with cavities in an early and an advanced stage, some improvement was noticeable, chiefly of a subjective character. It would, indeed, be singular if, in a disease like phthisis, with its peculiar mental constitution, cases would not be influenced by the notices, in leaded type, which the daily newspapers gave of the cure for consumption. In the details of the cases under my care, of which charts and notes are exhibited, the several changes regarding variation in the physical signs, examination of the sputum, &c., are given; but I may sum up the results of my own observation by stating that no improvement was manifested in any of my cases that could not be accounted for by good food, stimulants, and healthy hygienic surroundings. I am glad to report that in none of the cases, save one, were any unfavourable signs developed. In one case pneumonia of the lower lobe of one lung was set up in the course of the treatment. I may, however, add that the injections have not been used to the same extent as at Berlin. At present the treatment in the hospital wards under my care has been suspended.

Take now what is more important—the experiences of others. Dr. Feilchenfelt, the assistant to Dr. Levy's clinic, and the reporter of his cases, observes that three patients in the first stage of phthisis were dismissed as *cured*, the sputum having been found free from bacilli, and the auscultatory signs having *considerably decreased*. Dr. Feilchenfelt, adds the reporter in the medical journal, does not consider these two facts a complete proof of definitive cure—bacilli may disappear from the sputum to reappear again. He might have added—so also do the auscultatory signs vary in their existence. A short time since a case of phthisis in an early stage was treated by Koch's method, and discharged from a Dublin hospital as cured, the physical signs indicating that tubercle had disappeared from the lung, whilst the constitutional symptoms had also sub-

sided. Yet within three weeks after the patient's discharge she presented herself at the hospital dispensary, complaining of a return of her former symptoms, and asking the medical officer in charge to procure her an admission to the Hospice for the Dying.

The experience of Dr. Theodore Williams is worthy of note. He reports that out of 100 cases examined by himself in Dr. Ewald's clinic, in 8 there was genuine *improvement* in the condition of the patients—not a larger number than would be met with in the wards of well-regulated consumptive hospitals—and he adds: "These results could not for an instant compare with the results obtained at the high altitude sanitoria—such as Davos, St. Moritz, or Colorado—where restoration to health is often complete, no physical signs or tubercle bacilli being left.

Still more recently we have the testimony of Professor Ewald in reference to his experiences of Koch's treatment in the Augusta Hospital. He sums up his observations in the debate on Fraenkel's communication to the Berlin Medical Society by stating that he had not yet seen a single case of phthisis which he could really call cured. So impressed is he with the risks involved in the treatment, and with the uncertainty of its results, that he considers patients should be fully informed of the dangers incurred by the use of the lymph, just as surgeons point out the serious aspects of an operation before it is performed.

Before discussing the risks involved in treating phthisis, especially in the advanced stage, by Koch's injection, permit me to allude briefly to the steps which led Prof. Koch to adopt this remedy, and to state some difficulties which occur to me in accepting the *rationale* of its action.

Every infective disease is embraced under the class having for its origin the introduction, from without, of a pathogenic agent into the body of a patient, and its multiplication there. The infective agents are chiefly what are called bacteria. To Jenner, in the first instance, is due the credit of introducing into the human body organisms essentially like the infective agents of smallpox, but exciting only a mild and local disease. The protection thus afforded against a most virulent disease by a protective inoculation of a comparatively mild infective agent, led Pasteur to adopt the plan of inoculating fowl with the attenuated virus of fowl cholera; and subsequently he introduced his method of treating anthrax, swine fever, and rabies, by inoculation with the attenuated virus of each disease, the point established by the

method of treatment being, that immunity from disease was conferred by the use of certain substances derived from bacilli, but not the bacilli themselves. The principle involved in the treatment receives full recognition in the case of anthrax, septicæmia, tetanus, and diphtheria, the names of Wooldridge and Hankin being specially associated with it in this country. In fact, three years ago, Wooldridge commenced some researches with regard to the treatment of tuberculosis, in the direction followed by Koch—researches interrupted by his untimely death.

It occurs to me that two chief objections can be urged against the applicability of this method in the treatment of tuberculosis in man. First, the objection recognised by Koch himself, that experiments on animals are by no means conclusive as to the effects which follow their repetition in man. It is freely admitted that amongst animals, even in those of the same species, the results following injections of the same *materies morbi* will be different. I may give two illustrations. Dr. Burdon Sanderson inoculated a guinea-pig and a dog with an equal quantity of purulent fluid. The temperature observations were taken in both animals, and showed a lowering of temperature in the guinea-pig and a considerable rise in the dog; the poison produced in one animal pyrexia, in the other collapse. Fraenkel (*Grundriss der Bakterienkunde*) mentions that glanders-bacilli are of extreme virulence for field mice, whilst white mice, which are usually the subject of experiments, are absolutely unaffected by them. Leo has, nevertheless, recently succeeded in rendering white mice susceptible to glanders by feeding them for a considerable time with phloridzin, and thereby producing an artificial diabetes, so as to saturate their tissues with excreted sugar. There is one other observation I may make in reference to experiments on animals—viz., the very remarkable way in which guinea-pigs develop tubercle—so much so, that for a long time such distinguished observers as Fraenkel, Cohnheim, and Waldenburg, maintained the non-specific character of tubercle, from the fact that all guinea-pigs into whose abdominal cavities they introduced pieces of cork, paper, or thread, became tuberculous. Yet it is from experiments made solely upon such animals that the treatment for tuberculosis in man is based.

But a still more important element which would be likely to influence the effect of the treatment lies in the existence of special predisposing causes of disease. Up to the present, the method of treatment by inoculation of the products of bacillary culture has

been, I believe, applied in man only in the case of diseases which are regarded as infective in the unrestricted sense of the term. But, excepting acute miliary tuberculosis, no one would classify phthisis as an infective disease like a zymotic fever. In the latter, predisposing conditions become almost a vanishing quantity. Individuals in the full vigour of health, exposed to the poison of small-pox, scarlatina, or diphtheria, contract the disease without any special predisposing influences. There is, no doubt, a susceptibility of the blood to the influence of the zymotic poison, which appears to be congenital, and which I recognise is termed "predisposition." But these poisons exert their influence upon the body in a condition of health, and the restoration of the patient's health depends upon the power which the blood has of self-recovery from the perversion which it has undergone. It is quite different, however, with an essentially chronic disease like tuberculosis. Here a number of conditions come in, classified as predisposing causes, which bear strongly upon the invasion of tubercle bacilli. Hereditary taint, a condition of defective nutrition or assimilation, defective physique, progressive diminution of power of resistance to disease—in a word, diathesis—all these different conditions afford a marked contrast between acute infective diseases and tuberculosis, so that we might define tubercle as a product of the irritation of the bacillus in a suitable soil and under favourable conditions of development. We may indeed liken the body in such cases to a sickly elm which is attacked with rust. That tubercle requires a suitable soil is shown by the fact that lupus is confined to the skin and subcutaneous tissue, and does not involve either the lymphatic glands or internal organs. It would seem, like to Achilles, as if all the tissues of the body except the skin had been steeped in a Stygian pool, which rendered them invulnerable to a tubercular change. Is it not obvious that if by any method of treatment tubercular tissue became destroyed, or even that the bacilli themselves were killed, the predisposing conditions would still remain a source of danger which it is difficult to see could in any way be influenced by the treatment which annihilated the tubercle?

Passing now to the effects which the remedy exercises upon tubercular tissue, it seems clear that the danger in connection with the condition of "coagulation necrosis" induced is, that in air-containing organs like the lungs and alimentary canal the condition of necrosis may pass into one of gangrene, whilst in other

situations the dead tissue will have no outlet for its removal. Sir Joseph Lister points out that the necrosed tissue may undergo absorption, just as a catgut ligature does in surgical procedures. The conditions are, I think, far from parallel; but we may, doubtless, accept the view that, to a limited extent, in closed cavities, such as the joints, or even within the skull, absorption takes place. But if this "coagulation necrosis" becomes detached, as it is most likely to do in an organ that is in almost constant motion like the lung, there is a special danger of secondary infection from inhalation of displaced particles of the dead tissue. Is there not, moreover, a likelihood of metastasis taking place? How far these supposed risks have received confirmation by the remarkable observations of Virchow is well known to all here. These risks have passed from the region of hypothesis into that of hard facts; and it is scarcely an exaggeration to say that the first announcement of Professor Koch with regard to his new remedy for tuberculosis caused scarcely more surprise than the disclosure of Professor Virchow's examinations at the recent discussion on Professor Fraenkel's paper on the Koch treatment. If there be any man who claims our highest respect for his more than brilliant record for impartiality and acumen it is surely Virchow—*clarum et venerabile nomen.* It was he who defended Professor Koch before the Berlin Medical Society from the reproach of having made a premature publication of his method of treatment. What has he revealed to us? Here we have no uncertain speculations; there are no vagaries of subjective phenomena either in the patient or the physician to be accounted for.

Twenty-one *post-mortem* examinations have been made out of twenty-eight deaths of patients treated by injections of Koch's fluid from the time of the injection treatment until the end of 1890. Let me briefly summarise the results:—

First, that an injection pneumonia is set up, in which the inflammatory process is developed to a degree similar to what occurs in the external parts after injection. This pneumonia is characterised by the presence of a turbid infiltration, is less dry in character than caseous infiltration, and is likened by Virchow to phlegmonous inflammation. A phlegmonous inflammation set up in the lung! But he goes further, and he describes the *post-mortem* appearances of a case where the lower lobes of both lungs were as large as in ordinary hepatisation, but the individual foci were so packed that there was hardly any lung tissue between

them. In this case the patient had received six injections—the last one being four days before death. The injections were discontinued from the presence of persistent fever and the signs of infiltration of the lower lobes. The infiltrations first began after the injections; whereas previously there had been only indications of disease at one apex.

A second point drawn attention to is the development of fresh tubercles as a result of the injection treatment. Submiliary tubercles were in some cases found in the pleura, pericardium, epicardium, and peritoneum, and these tubercles showed no appearances whatever of having undergone a necrotic or any other change; whilst Virchow has no doubt in the tubercles being developed *ex post*. Then comes the observation that it is difficult to realise how these tubercles could be developed except as a result of metastasis; that the bacilli have been mobilised and diffused through the body by a process of infection—that is, as a result of the injection the products of disintegration become more fluid, the bacilli are rendered more mobile, and hence new foci of disease arise in other places. One might exclaim—"Cry havoc, and let slip the dogs of war."

Professor Virchow further remarks that in fatal cases of ulcerative phthisis the large majority exhibited recent changes of great extent evidencing pleurisy, simple and tuberculous, frequently hæmorrhagic, and not infrequently bilateral.

Lastly, he details a case of metastatic arachnitis following four injections, of 2 milligrammes in all, in a child two years and nine months old, in which, with colossal hyperæmia of the pia mater, such as he had never before observed, tubercles, well formed and free from retrogressive changes, were found in the pia mater.

In carefully analysing these results, we should bear in mind how the local conditions which are brought about by the injection differ from those which we have been in the habit of teaching attend the transformation of tubercle in these cases in which repair takes place. The process of fibrosis, which, commencing in the periplast of the giant cells, and gradually invading the central protoplasm, more or less completely isolates the bacilli, and opposes a protective barrier to their transmission from place to place. The results of the injection, on the other hand, is to soften the tissue in which the bacilli are lodged, thus favouring their mobilisation and incursions into areas previously unaffected. Examinations made by our pathologist, Dr. M'Weeney, showed that in some cases under the

treatment, sputum, which prior to Koch's fluid having been used contained bacilli in small numbers and isolated, presented bacilli in aggregated masses after the injection.

There are, doubtless, many who think that Professor Koch's cure for tuberculosis received its death-knell at the hands of Professor Virchow. I confess I do not quite share this view. I believe Virchow's remarks point to caution in the use, if not the suspension, of a method of treatment which, indiscriminately employed, may produce results that are disastrous. They appear to me to call for the establishment of an Institute, in which those who voluntarily submit to the proposed treatment may be made the subject of rigid and scientific examination. And this leads me to ask why more extended observations have not been made on animals before the method was tried in man?—Why, for instance, it was not extensively employed in the treatment of bovine tuberculosis?

It would be going too far to say that a method of treatment which has for its basis an intelligible or workable hypothesis, should be consigned to the limbo of the relics of the pharmaceutical chemist. It is, however, remarkable that it is in relation to curative medicine that most pitfalls beset us. Charles Lamb might well have included *similia similibus curantur* amongst his list of mistaken *dicta*. It is not so very long since the *Doctrine* of *Signatures* was in vogue, when the lungs of a fox were prescribed for asthma; turmeric, because of its yellow colour, for jaundice; poppies for head affections; and so on. The hypnotic craze, after smouldering for years, has flickered into a tiny flame, but now appears to be dying out, exhausted by its feeble display of activity. At the present time we have the spectacle of a great scientist promising rejuvenescence to those who will submit to be injected with his *Elixir vitæ*. Can we pretend that our modern system of therapeutics—some are pleased to call it a science—is based upon laws deduced from established physiological truths and strengthened by experience, not as it is, in great part, a mixture of blind faith, homœopathy, and sensationalism? In making these remarks I do not wish to be understood as implying any form of disrespect to Professor Koch. I, personally, entertain the belief that the future of Medicine, preventive and curative, will be largely bound up with the study of micro-organisms—their conditions of development, life, and decay. In this department no one stands upon a higher pedestal of fame than he whose treatment of tubercular disease we are now discussing. If report speaks truly, Professor

Koch has not had justice done to him. Exigencies of state and public clamour appear to have hastened the disclosure of a great conception before it had reached maturity. Can it be said that the profession itself is quite blameless in the period of excitement through which we are passing? I am not one of those who cultivate silence, following the proverb that "a fool, even when he holdeth his peace, is counted wise." But I ask—Is there not an ample field for the ventilation of our views in our different societies, in our *own* journals, in our hospitals and medical schools? It is a wise and politic course, in those waves of excitement which pass over communities, and which render them for a time irrational and inconsiderate, that our staid usages should be strictly adhered to, so that when the day of reckoning comes we shall not be held responsible for hopes doomed to disappointment. Such a wise course is at all events most in harmony with the honourable traditions of a profession which, even in this cynical age, we can claim to be the noblest that man can follow.

ART. VIII.—*Notes on a series of Phthisical Cases in Various Stages under Treatment by Koch's Method.*[a] By M. A. BOYD, M.D.; Physician, Mater Misericordiæ Hospital.

IN making experiments on a number of cases of phthisis by Koch's method I was early impressed with the necessity of selecting, if possible, cases illustrating the disease in every stage, from its inception in early broncho-pneumonia, or congestion of limited patches of the lung, to its final stage of chronic phthisis, with fibrosis, cavities, and secondary pathological changes in other organs.

We have been deluged *ad nauseam* in medical literature since the lymph was introduced with temperatures and histories of cases of phthisis, with descriptions of softening and cavities, and the presence of bacilli as indicating phthisis, but there has been no attempt to classify these cases under the various stages the disease presents from its invasion to its termination; and the value of the treatment or its injurious results in the various stages cannot, in my opinion, be correctly estimated. The object of this paper is to try and remedy in some systematic way this indefinite manner of description, and I have divided my cases into groups according to the stage of phthisis they illustrated, taking two or three typical

[a] Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, January 30, 1891. [For the discussion on this paper, see page 262.]

examples of each group to illustrate their behaviour under injection treatment.

The results so far are not to be considered as conclusive evidence of the curative effects of this method of treatment; neither can they be regarded as evidences of its inutility. They are in reality only a contribution to the experiments with this remedy—tentative in their nature—and I submit them to the Academy with such conclusions as I could so far draw from them, to enable us to form some definite idea as to what changes are produced in the lungs and in the condition of the patient in the various stages in which the remedy was injected.

These results we could only judge of by the ordinary clinical phenomena presented by each case, as, so far, I am happy to say, no opportunity of judging of them *post mortem* has arisen. Most of the cases have now been over a month or six weeks under treatment, and though I had a *resumé* of the results ready for the last meeting of the Section, a month ago, when they were only a fortnight under treatment, most of the observations I then made would apply now, as I had no hesitation in forming an opinion then, and further observation has done nothing more than confirm the correctness of that opinion.

It may seem to many who have themselves subjected patients to this method of treatment rather premature to draw conclusions in such a length of time; but I would submit that in the same length of time in any case of phthisis submitted to special treatment we would be able to form an opinion as to whether our patients were benefited or the reverse, judging from all the physical signs and clinical data before us.

Like all other remedies brought forward as a special one, we have over-sanguine enthusiasts proclaiming it from the housetops as the panacea for all cases of consumption; and, on the other hand, the sceptics who, believing no remedy is of use which they themselves have not introduced, look on it as of no value whatever. All rational medical men must, however, regard it as a remedy still only on trial, and its beneficial or injurious effects to be judged only by time and results. Cases that now seem injuriously affected by it may hereafter exhibit a more active fibrotic deposition in the situations where the lymph produced inflammation and necrosis, and, as this fibrosis is Nature's most perfect form of cure when left to herself, we can only wait patiently and watch closely the after-progress of our cases.

It is not necessary for me here to enter into detail as to the manner in which the injections were carried out, as you are all familiar with the method. It will suffice to mention they were given in gradually increasing doses, from one milligramme of a one per cent. solution upwards till reaction exhibited itself, and then by further increase, with a day or two of interval, until a maximal dose of fifteen or twenty milligrammes was reached in some cases, the physical signs and symptoms, with the temperature, being carefully noted before beginning the injections, and the alterations in these from day to day, as they proceeded, being carefully noted also, so that no symptom could escape detection.

Here I have to express my indebtedness to our distinguished pathologist at the Mater Misericordiæ Hospital, Dr. M'Weeney, for his readiness in preparing and assisting to inject the lymph, and the interest he has taken in the progress of the cases, and his ready help on all occasions; also to my resident pupils, Messrs. Dunne and Dowling, for their indefatigable exertions in taking temperatures at all hours of the day and night.

The series of cases I have divided into groups, as I have mentioned, each group indicating the stage of phthisis present, and the result produced by injections stated broadly in each.

The groups or classes are :—

1st. Early phthisis with broncho-pneumonia, without softening. Not improved.

2nd. Early phthisis with broncho-pneumonia and softening. Remarkably improved.

3rd. Advancing phthisis with formation of cavities. Not improved.

4th. Chronic phthisis with cavities and fibrosis and secondary engagement of pleura, bowels, or larynx. Not improved, and in some no reaction.

Three cases of the series belong to the first group.

Two belong to the second group.

Two belong to the third group.

Three belong to the fourth group.

The remaining cases of the series, unclassed, were—One case of croupous pneumonia of left apex, with rusty sputum; no bacilli at first, and no reaction to remedy, which case I shall refer to later. One case of bronchial catarrh or winter cough; no crepitus or consolidation anywhere, with bacilli absent. And two cases of

pleural effusion—one on right side, the other on left; no expectoration in either case, but followed by reaction after injection.

If we now take up the three cases in Class 1—namely, early phthisis with broncho-pneumonia without softening, and in all of which bacilli were found in the sputum, and examine their behaviour under the injections, we find the first case a girl, aged twenty, with a bad family history—a sister having died from acute phthisis or scrofulous pneumonia, and another at present suffering from cough with wasting. This patient, at the time injections were begun, had been a week or ten days ill with an attack ushered in by shivering, feverishness, cough, and pain in left side under nipple, with a history of a cold caught a week or ten days previously, and a cough of some weeks' previous duration. Examination of her chest indicated a condition of pneumonic consolidation of almost the entire of left lung, with a few resonant patches in front and another at apex of scapula behind. In these consolidated patches there was some coarse crepitus under clavicle in front and fine pneumonic crepitus at base, back and front, with absence of vesicular breathing and breath sounds; and, with all this, complete absence of expectoration, and a hacking cough and dry hot skin. The case had all the characters of a typical scrofulous pneumonia in an early stage, bacilli being found abundant in the single sputum we obtained for examination. The patient's temperature averaged about 100° to 102° when the first injection of a milligramme was begun, which produced no reaction. A second injection of 3 milligrammes, two days later, produced some; and a third injection of 5 milligrammes, three days subsequently, sent the temperature up to over 104°, followed by a fall, the day after, to normal; and two additional injections of 5 milligrammes each, at an interval of three days between, produced apparently little effect on the temperature, which continued about the same height as before injections.

Examination of the lung at this stage showed the pneumonia more consolidated, with less air entering and absolutely no expectoration, and increase of the hacking cough. At the end of ten days' treatment the injections were stopped, the temperature continuing between 100° and 103°, and remaining so for a fortnight. Subsequently, all this time there was little change in the lung, which remained consolidated, with still almost no expectoration, pain under nipple of left breast being complained of, for which a blister was applied on the 24th December, three weeks from

beginning of treatment. A note made on the 29th December says:—"More air entering left base posteriorly, and less crepitus there. Query—Has the blister been the means of producing this?" From this time the temperature and symptoms began to assume a hectic type, temperature occasionally reaching 104° at night and falling to near normal in the morning, with perspiration. Antifebrin and antipyrin were now given to keep the temperature down, with good results; the former was stopped, as the perspirations it produced were so profuse, and the antipyrin given instead, as it had not this troublesome effect.

Seeing the symptoms were not improving, it was decided to try again the lymph, and 5 milligrammes were injected. It produced no upward reaction, but, on the contrary, brought the temperature down to normal, much as the antipyrin did, but only to rise again the following day to its former hectic type. A note made five days later says:—"Distinct evidences of cavities beginning to form in the consolidated portions above and below nipple, with abundant liquid râles and increase in expectoration;" and these symptoms still continue to the present. The right lung remained free from disease all through.

The second case in this class (a boy, aged twenty-two) was admitted with consolidation of entire lower lobe of left lung, with tubular breathing and crepitus; also some consolidation of apex of right, with tubular breathing, but no crepitus. The patient had been confined to bed, a week before admission, with profuse blood-spitting, and had previously suffered from a cough and wasting. His temperature was high when admitted, and the pneumonia of left base was evidently hæmorrhagic. Bacilli in abundance were found in the expectoration. In a fortnight from the first injection he received four, varying from 1 to 5 milligrammes, which produced no effect on the temperature, which remained high, but caused a crepitus to appear at the right apex, where tubular breathing existed previously, and a large increase in the expectoration, with some blood. The symptoms of consolidation of left base were also increased, and crepitus showed itself all over posterior aspect of left side, where it had not existed previously. Four days subsequently crepitus made its appearance at right base posteriorly, not accompanied by much consolidation, and, in four or five days more, all over anterior aspect of same lung. Injections were not subsequently given; and for the past three weeks, up to a day or two ago, expectoration was gradually diminishing. Pneumonia has

been less at left base, and subcrepitating râles have replaced the crepitus in right lung. The patient still continues to waste, and the fever, which is still present, is of the hectic type.

The third case in this class (a girl, aged twenty), who suffered from cough, the result of cold caught five days previous to coming to hospital, with pain in right side and expectoration. Bacilli present. Showed, on examination, bronchial râles over chest, and a slight dull patch of broncho-pneumonia at point of scapula behind, about two inches in circumference, over which, and nowhere else, a fine crepitus was heard. Two and 5 milligrammes produced no reaction, 7 and 10, four and six days subsequently produced slight reaction, and the patch of pneumonia increased after last injection until a crepitus was heard over the entire base posteriorly. She was then left without any injection for a fortnight, during which time the broncho-pneumonia gradually subsided by the aid of a blister, at the end of which time 15 milligrammes produced a rise of three degrees in temperature from normal, which was not repeated in an injection three days later of a similar quantity; and no evidence being found of any fresh trouble in the lung, and all expectoration having ceased, and appetite improving, she was dismissed ten days later, apparently quite well, temperature showing a tendency to rise to 100° each evening without any lung symptom to account for it up to the time she left.

In watching these three cases from day to day, and noting the effects of the injections, the conviction was forced on me, and that during the early period of the injections, that whatever other effect the lymph produces it undoubtedly caused increase in the broncho-pneumonia and extension of it to places where no evidence of it existed previously.[a] And it may yet become a question whether, when an active broncho-pneumonia is present, with high temperature and bacilli present in the sputum, it would not be better to treat it by counter-irritation and other means, and when the temperature had fallen have recourse to the lymph injections. This, however, can only be decided by further observations; but I make the suggestion for what it is worth, judging by my experience in these three cases.

I now take up Class 2—early phthisis, with limited broncho-pneumonia and softening. "Slight dulness of one apex, with

[a] These observations were made previous to Virchow's observations on the post-mortem appearances of the lungs of those dying during injection treatment.

crepitus and some expectoration," would describe this class. The first of the two cases in this class—a girl, aged twenty-one—complained of cough for two months before admission, which got worse a week previous, and was accompanied by wasting and marked anæmia, anæmic murmurs being heard over heart, and scanty expectoration containing bacilli, but no blood, was present; slight dulness under clavicle on left side, with crepitus and some dulness, with tubular breathing in supra-scapular region behind. There was also loss of appetite and amenorrhœa.

Two milligrammes of the lymph produced prompt reaction, with headache, pain in the back, and sickness, followed by perspiration and a fall in the temperature back to normal. Twenty-four hours after the first injection produced a remarkable change in this patient's appearance. The anæmic aspect altogether disappeared, and with it, strange to say, the anæmic murmurs over heart also; whilst examination of the affected apex showed large subcrepitant râles replacing the crepitus, and an abundant expectoration containing air and some blood. The expectoration gradually diminished, and in three weeks ceased altogether, though she continued to react to the injections, which were gradually increased up to 15 milligrammes. There was no increase in the expectoration after the first two; temperature invariably falling to normal after rise produced by each injection, and continuing so until a fresh one sent it up again. Though this patient has been six weeks undergoing injections, the reactions to 15 milligrammes are now as prompt as they were in the beginning; and as her temperature seemed inclined to rise for the past week, without any cause to account for it, she was allowed out of bed, and looked and felt quite well, with appetite improved. Examination of the apex three days ago shows still some large bronchial râles in this situation, but there is no expectoration and no cough.

The marked improvement in this patient's condition, though she still reacts to each injection, would, I think, indicate that it is not always necessary to go on injecting when you obtain improvement in the lung symptoms and general health. There is just the danger that the continued injections and keeping the patients in bed may produce a condition of lowered nutrition favourable to the growth of fresh tubercle in other portions of the lung, or in other situations where it shows itself as a secondary affection.

The second case in this class was an exact counterpart of the one first described, with limited disease and softening at left apex,

with a low temperature, and the same anæmia of early phthisis. The first two injections produced the same increase in expectoration containing the same abundant air-bubbles, the same subcrepitant râles replacing the crepitus at the left apex, and the disappearance of the anæmia.

Though she still continues to react to a 15 milligramme injection, expectoration has entirely ceased, and scattered bronchial râles are to be heard only at left apex, where crepitus existed previously. Her general health has also improved, and she may fairly be described as cured, as far as we understand the term cure applied in this method of treatment.

I now take Class 3—advancing phthisis, with cavities, with extensive disease in either one or both lungs, and abundant expectoration containing numerous bacilli. The first case in this class—a girl, aged twenty-one, who had a cough, wasting, and night-sweats for three months previously—showed the following conditions of the lungs when injections were begun:—Dulness under both clavicles; "cracked-pot sound" on percussion in both these situations. Crepitus on right side, limited to two inches below clavicle, but extending posteriorly all under scapula; on left side crepitus extending to nipple, and posteriorly all under scapula, with tubular breathing at vertebral edge. Bases of both lungs free.

After the first three injections, given on three succeeding days, there was increased cough, and abundant air-laden expectoration, followed by diminished crepitus in the portions of lung where it existed previously, and evidence of increased dulness in these situations. The injections in this case, up to the number of five in ten days, had the peculiar effect of causing the temperature to fall almost to normal—it being 102° when they were begun—and keeping it so, though the lungs showed more consolidation at the same time. The temperature then began to rise, and remained uninfluenced by subsequent injections, as there was neither a reaction nor fall produced by them. A fortnight after injections were begun the left lung was consolidated to the base anteriorly, and crepitus began to show itself at right base, where none existed previously. Patient was then left without injections for a fortnight, during which time the cough, perspirations, crepitus, and expectoration continued unabated. Ten milligrammes were then injected, which caused temperature to drop, only to rise again the following day; and since then the symptoms all show the hectic

type, and a note made on the 26th of this month is as follows:—"Examination to-day shows extensive excavations, which may be called injection excavations, all through the left lung in its anterior aspect, accompanied by gurgling and cavernous respiration, and extending backwards to subscapular region. Examination of right lung shows that excavation and cavities have extended rapidly through upper lobe, and that cavities are in process of formation in the lower lobe, where crepitus existed previously." The second case in this class, with almost identical lung symptoms, ran almost the same course, the only difference being that the earlier injections produced some reaction, instead of lowering the temperature, as they did in the last case. The same consolidations followed in the affected areas, with crepitus making its appearance in the right base, where it had not existed previously, as in the last case. The same excavations following, and the same hectic symptoms being present, can we hope improvement will still result?

I now come to the last class: Class 4—chronic phthisis with fibrosis and cavities, and secondary engagement of pleura, bowels, or larynx.

Here Case A. (a seaman, aged twenty-three) might be taken as a typical example of this class; with old cavities in both apices, with considerable fibroid thickening around them, and general flattening of the chest, with deficient expansion, and green, purulent expectoration, evidently from cavities, got rid of by vomiting; looked a most unpromising specimen for any method of treatment. There seemed to be no reaction after any of the injections, rather a tendency to a fall, and no alteration in the lung symptoms; the temperature ranging from 99° to 102°, uninfluenced by the injections.

From the absence of results in this case, and the evident absence of any tissue change resulting to the fibrotic lung, the question arises if the lymph exercises any effect whatever on a lung where nature has made an attempt at cure by setting up fibrotic changes in and around the diseased areas. This, however, is a question that cannot be answered definitely here, and that can only be answered by time and observation. I can only call attention to the fact that no reaction followed the injection of the lymph in this typical example of nature's cure in the last stages of consumption. This poor boy, after remaining a month in hospital, was sent out not much better than when he came in; and I have learned he has since died, and will, doubtless, be regarded by some

well-meaning crusader (if such should chance to hear of him in getting up information against Koch and his remedy) as another victim to the lymph.

The second case in this group—chronic phthisis of lung with laryngeal phthisis—is another good example of this group. Here the lung symptoms indicated considerable fibrosis, with contraction and flattening under both clavicles, and remains of cavities partly contracted.

The laryngeal symptoms were quiescent, though the laryngoscope indicated that disease had, at a former time, been active, as there were evidences of cicatrices, but no ulcers, at time of examination. Larynx, however, felt sore, and there was considerable aphonia. Five injections, varying from 1 to 5 milligrammes, produced no reaction, and no symptoms in lung; larynx feeling a little sore, but there was no tendency to tumefaction, or redness of it. Though the patient's general health has improved, there is no change in the lungs or expectoration in any way, and he was dismissed, "not benefited," after injection treatment extending over a month.

The third case in this group—a farm labourer, aged thirty, who suffered from cough for a year and a half, with wasting and loss of voice, with soreness in larynx for past six months—showed, before injections were begun, consolidation, crepitus, and flattening in left upper lobe, back and front, with consolidation and flattening in right apex also. Larynx showed tumefaction over arytænoids and of arytæno-epiglottic folds, with complete aphonia, but no ulceration evident on vocal cords or elsewhere in larynx. Expectoration moderate in quantity, and containing bacilli. Cough was very troublesome, and frequently caused vomiting, and there was complete loss of appetite. Injections, beginning with 1 milligramme and rising gradually to 10, were given from time to time during a month. Their only effect apparently was to produce some soreness in the larynx and some increase in expectoration, but no laryngeal distress in breathing whatever, the lung symptoms remaining unaltered from beginning to end of the injections. At the end of a month's treatment patient was dismissed, "not benefited."

I have alluded to four other cases of this series, which were not classed under any of the groups, but to whom injections were given. The first, a case of croupous pneumonia of left upper lobe, with typical rusty sputum, fever, and fall in temperature, with resolution. This attack was followed, at the end of a week, by a

second similar attack in the middle lobe of right lung, with the identical symptoms of rusty sputum, consolidation, and resolution, the second attack being apparently produced in the middle lobe of the right lung from infection by the pneumonic sputum coming from the one first engaged, as Fraenkel's diplococci were found in abundance in it on examination. During the progress of the croupous pneumonia in both lungs, and for ten or twelve days subsequent to the resolution in the lung last engaged, injections of lymph, varying from 1 to 10 milligrammes, were given, the temperature at this time being normal. No reaction or alteration in temperature of any kind followed them; the only result seemed to be that the larger injections caused the patient some sickness in stomach and loss of appetite. The injections were then stopped, the sputum still showing diplococci in abundance, but no bacilli whatever. Some ten days later, as some crepitus of resolution was still to be heard in right middle lobe, the sputum was again examined, and both bacilli and diplococci were found to be present in several specimens of it. An injection of lymph was then given, and, for the first time, a prompt reaction followed it. To each injection, for a month subsequently, of gradually increasing doses, a reaction followed, bacilli and diplococci being still present. The patient then ceased to react to injections, and an examination of the sputum showed the bacilli had disappeared, leaving the diplococci to hold the field, the expectoration being very little, and the patient gaining strength and appetite subsequently.

How the tubercle bacilli came to be present in this case side by side with Fraenkel's pneumono-cocci I cannot explain; but their presence as a result of the injections is remarkable. It is but fair to say this patient was surrounded during his pneumonic attack by cases of phthisis in all stages undergoing treatment, and his lungs, weakened by the pneumonia, may have proved a suitable soil for bacilli to settle on.

The second and third of the series unclassed were two cases of pleural effusion—one on right side, in a girl, aged twenty, the other on left, in a young man, aged twenty-five. The former aspirated to five pints, the latter to six. In neither case was there a history to point to previous tuberculosis. Injections of the lymph were, however, followed by reactions in each case, and if we regard, as Koch states, reactions to the remedy as an evidence of tubercle, these cases must be regarded, not as simple pleural effusions, but as tubercular ones. The third and last case of the unclassed series—

a girl, aged nineteen, with a cough lasting since the winter set in—must be regarded also as an evidence of the diagnostic properties of Koch's fluid. As the symptoms indicated only bronchial catarrh, or winter cough, with, however, some loss of flesh and a troublesome cough and glairy expectoration, without any evidence of dulness or crepitus anywhere in either lung, and no throat trouble, a prompt reaction to the remedy puts a different complexion on the diagnosis. No bacilli were found in expectoration after examinations, and it is in character and appearance only bronchial. This case may be regarded, in the absence of bacilli, as an example of peri-bronchial phthisis, at least in the presence of the reaction produced by the lymph and the absence of any consolidation throughout the lungs, no other diagnosis can be arrived at. The girl since left hospital free from cough, and has ceased to react to the lymph.

The conclusions to be drawn from the experiments, so far, can be summed up in a few words. In cases of limited pulmonary phthisis, with softening and expectoration, where a free communication exists with the bronchi, the remedy exercises a marked improvement. Whether it confers future immunity from fresh attacks remains yet to be determined.

In cases of extensive advancing phthisis, with formation of cavities, improvement in the lungs and general health is undoubtedly not indicated. Any fresh areas of consolidation associated with them seems to be aggravated, and fresh ones arise leading to rapid excavation. In cases of recent active broncho-pneumonia, with little expectoration, high temperature, and no communication established with the bronchi, the remedy seems to increase the pulmonary trouble. Cases of scrofulous pneumonia and acute tuberculosis would come under this class, and they would seem to be the cases in which Koch proposes to establish, by surgical means, an outlet through the chest-wall, by incisions in the lung, to give exit to those portions necrosed. That in cases of chronic phthisis, with fibrosis, the remedy does not seem to produce, in some cases, any reaction or change in the lung whatever, and that we may regard them, in my opinion, so far, as the most hopeless cases for treatment by this means.

That the remedy is of undoubted diagnostic value in distinguishing cases of croupous pneumonia from broncho-pneumonia of early phthisis, and also in distinguishing tubercular pleurisy from simple effusion. It would also seem to be more reliable than the bacillary

test in distinguishing bronchial catarrh or bronchitis from the same affections depending on peri-bronchial phthisis, where often no bacilli are found in the sputum.

That the remedy, though not suitable for all cases of consumption, is, at all events, the thin end of the wedge in the manner of treatment, and we are, I think, so far justified in looking forward to future experiments in this direction as likely to evolve a more perfect and more certain form of injection than this at present proves, either by improvement in its form of administration, or by adding to it some additional bacillicide which will destroy those germs in the lung after being set free, and isolated from the tissues around by the present injection.

ART. IX.—*A Series of Six Cases of Pulmonary Disease treated by Koch's Method.*[a] By JOHN WILLIAM MOORE, B.A., M.D., M.Ch., Univ. Dubl.; Fellow and Registrar of the Royal College of Physicians of Ireland; Physician to the Meath Hospital, Dublin; Joint Professor of Practice of Medicine in the Schools of Surgery of the Royal College of Surgeons in Ireland; Consulting Physician to Cork-street Fever Hospital, Dublin, and to the Whitworth Hospital, Drumcondra; ex-Scholar and Diplomate in State Medicine of Trinity College, Dublin.

IN making this crude, and in many respects imperfect, communication to the Royal Academy of Medicine in Ireland, I do not wish to be misunderstood. I am no advocate for, or against, Koch's method of treatment for tuberculosis. Its precise therapeutical value cannot be determined with anything approaching scientific accuracy for months—perhaps for years—to come. Meanwhile our duty as clinical physicians is plain. Recognising the genius of the great German scientist, and with a lively appreciation of the glorious possibilities which may yet be attained through his discovery, we should test its claim by the touchstone of practical experience, and faithfully record the clinical phenomena observed without prejudice, and in a calm, philosophic spirit.

This is the object I have set before me in the preparation of my paper, which embodies the trifling experience of the action of Koch's remedy as yet obtained in the medical wards of the Meath Hospital.

[a] Read before the Section of Medicine in the Royal Academy of Medicine in Ireland on Friday, January 30, 1891. [For the discussion on this paper, see page 262.]

On December 1, 1890, I took up clinical duty in rotation in those wards. Immediately afterwards, at Sir William Stokes's request, I selected two phthisical patients as suitable subjects for the Koch treatment of tuberculosis, of which Sir William was anxious to make trial on his return from Berlin.

In both cases extensive consolidation of the apex of the left lung existed, and tubercle bacilli were found in abundance in the sputum. The test employed was the carbol-fuchsin (Ziehl-Neelsen) fluid, modified by Günther. Ten cc. of a concentrated alcoholic solution of fuchsin are added to 90 cc. of a 5 per cent. solution of carbolic acid, and the mixture is warmed. The specimen of sputum is immersed in this fluid, and, when fuchsin-coloured, is placed in 100 grammes of a 25 per cent. sulphuric acid containing 2 grammes of methylene blue. The preparation is then washed in water and mounted in Canada balsam. The bacilli appear red, all other fungi and cells, blue.

On December 5, Sir William Stokes lectured in the Hospital Theatre on Koch's method of treatment, and demonstrated the mode of injection on one of my patients—Mary B., aged twenty-three years. For the notes of her case, and of the other cases detailed in this paper, I am indebted to my clinical clerk, Mr. Alfred Power, who also made the microscopical examinations of the sputum, and recorded the clinical observations with unflagging zeal and ability.

CASE I.—*Tubercular Phthisis—Thirteen injections* (6 *of* 8 *mgrms. each, and* 7 *of* 10 *mgrms. each*)—*Marked improvement.*

Mary B., aged twenty-three, single, machinist, of temperate habits, but leading a sedentary life. Father died of phthisis; a brother died young, of "indigestion;" mother also dead; one sister living. Dry cough since January, 1890. Became decidedly ill in the following July—cough, expectoration, loss of flesh, loss of appetite; excessive night sweats, which keep her awake; increasing weakness, and continual headache. Since September, partial deafness of left ear, constant dull pain in her left shoulder, increased by coughing. No history of hæmoptysis.

Admitted to hospital on November 26, 1890.

Sallow, of very phthisical aspect, and despondent. Weighs 8 st. 8 lbs., compared with 9 st. 4 lbs. last July. Teeth very carious; gums red; tongue moist, but thickly furred; skin moist and clammy; nails clubbed, and finger-ends rounded. Respiration of the abdominal type. Deep hollows above and below the clavicles, especially on the left side, where pain and tenderness on pressure are complained of, as well as between

the shoulder-blades behind. Over the left apex there are these physical signs—lessened expansion, increased vocal fremitus and resonance, conduction of heart sounds, subclavian murmur, dulness on percussion and want of resiliency, diminished vesicular breathing, dry, "crumpling" crepitus on deep respiration, "cog-wheel" inspiration. Menstruation is regular. P. 80; R. 24; T. 98·4°. There is a thick, greenish, nummular sputum, which is brought up with difficulty. It was found to contain crowds of bacilli.

Diagnosis.—Tubercular phthisis, affecting left apex—infiltration and beginning softening.

Treatment.—Nourishing diet; a sedative cough mixture, and a mixture of chloride of calcium, strychnin, and arsenic.

At 11 a.m. of Friday, December 5, 1890, Sir William Stokes injected 8 mgrms. of an one-per-cent. solution of Koch's fluid into the left interscapular region. At 1 p.m. the seat of puncture was very sore, but not swollen; there was general sweating; the pain in the shoulder had disappeared. The patient felt very sleepy until 4 45 p.m., when she had marked rigors, lasting half an hour. The cough now became much worse; she felt very sick and weak, and moaned constantly. After the rigors came a "flush of heat," followed by profuse sweating, nausea, and a peculiar mottling over the face. The seat of puncture was now very sore and œdematous. A quantity of ropy sputum was coughed up, which, on examination ten hours afterwards, was found to swarm with bacilli, of which some were arranged in chains. During the reaction the patient's temperature rose at 9 p.m. to 105·6°; pulse, 134; respirations, 48. She could take only fluid food at this time. Next morning a loose, loud crepitation was audible all over the left apex, and only here; it resembled the crepitus redux of acute pneumonia. By noon the patient's state had apparently returned to what it had been before the inoculation.

It would be wearisome to record the subsequent history of this case in detail; but the following is a tabular statement of the several injections up to the present:—

Date 1890	No. of Injections	Dose	Max. Temp.
Dec. 5	1	8 mgrms.	105·6°
,, 8	2	8 ,,	100·0°
,, 11	3	8 ,,	100·8°
,, 15	4	8 ,,	99·0°
,, 17	5	8 ,,	100·4°
,, 19	6	8 ,,	100·0°
,, 23	7	10 ,,	99·8°
,, 31	8	10 ,,	102·8°

Date 1891		No. of Injections	Dose	Max. Temp.
Jan. 8	-	9	10 „	103·4°
„ 13	-	10	10 „	101·0°
„ 20	-	11	10 „	103·0°
„ 26	-	12	10 „	100·4°
„ 29	-	13	10 „	98·4°

In this case there has been an undoubted improvement in the patient's constitutional state and in the physical signs. Sweating has ceased. Appetite is much improved. The cough is nearly gone, and the expectoration has proportionately diminished; it has lost its nummular character, and is more frothy. There is still dulness on percussion over the left apex, but there is more vesicular breathing and less dyspnœa. From the time of her admission to hospital until the date of the fourth injection (December 15) Mary B. lost 2 lbs. in weight; but since then she has gained 9 lbs.

After the seventh inoculation, on December 22, a papular rash appeared on the face, neck, and chest. This was accompanied by pain and itchiness; but all these symptoms had vanished the following morning. After the eleventh inoculation the patient did not feel at all sick; but next day she looked rather tired, and complained of a bad headache. After the twelfth injection there was albuminuria, and a deposit of lithates in the urine.

Case II.—*Tubercular Phthisis affecting the Left Apex—Twelve injections (7 of 8 mgrms. each, 5 of 10 mgrms. each)—Decided improvement.*

Michael H , a policeman, aged twenty-six, single, admitted November 25, 1890, complaining of loss of appetite, flesh, and strength, a bad cough and spit, and great distaste for fat and greasy foods. Family history good. Illness dates back to July, 1890. No night sweats, but clammy skin; clubbed fingers; slight red line along the gums; no hæmoptysis. Weighs 11 st., having lost 1 st. 4 lbs. since July. Consolidation of left apex evidenced by dulness on percussion and want of resiliency; lessened expansion, and flattening below the clavicle; conduction of heart sounds and of voice; interrupted inspiration; lessened vesicular breathing, and a crackle towards the end of inspiration; sputa abundant, greenish, nummular, containing many tubercle bacilli (Günther's test).

Inoculated with 8 mgrms. of the one-per-cent. solution of Koch's fluid at 11 a.m. of Saturday, December 6, 1890. Experienced no marked change until 7 p.m., beyond increased cough and expectoration, as well as headache. At the hour named he had a slight rigor, and felt very sick and feverish, the left knee-joint becoming painful, and remaining so for some three hours. Free perspiration at 8 p.m., followed by a good night, and felt well next morning, except for increased cough. T. reached 101·5°, remaining at this level for eight hours and then returning to

99°–100°. Sputa ropy and frothy, full of bacilli. Loud, loose crepitation all over the left apex, and there only.

After the second inoculation, on December 9, his throat became very sore. Mr. Smyly examined the larynx, and described thickening of the arytenoids, with some slight general catarrhal inflammation.

After the fifth inoculation, on December 20, severe darting pains were felt in the left apex, the superficial veins in the neighbourhood became very prominent, there was slight perspiration, and the cough was most troublesome.

The sixth inoculation, on December 23, was followed by sore throat and a secondary febrile attack, lasting seven days (max. temp. = 103°). A roseolar rash accompanied this fever.

The ninth inoculation (January 13, 1891) was succeeded by plentiful hæmoptysis on the 16th, the blood being dark-coloured, and in small, round clots. This attack lasted about six hours, and passed off without any untoward result.

This patient is highly intelligent, so I asked him to write out for me a brief statement of his case. This he did on January 26, and he describes his present state in these words:—

"At present the cough and phlegm have decreased. I can lie on both sides with the greatest ease, and there is no unusual cough at bedtime. I cough very little during the daytime. Appetite is now good. Gaining in flesh; weight now 11 st. 4 lbs. Strength is returning, and I feel in general more cheerful and in better health."

It is right to mention that this patient also was on the chloride of calcium, arsenic, and strychnin mixture, already mentioned in this paper. I am gratified to find that so high an authority as Professor Leyden continues to use constitutional treatment while employing Koch's remedy.

In addition to the foregoing original cases, as they may be called, four other cases under my care have up to the present been injected with Koch's fluid.

Case III.—*Advanced Pulmonary Tuberculosis—Extreme reaction after one small dose—Treatment discontinued.*

Peter H., aged twenty-four, single, a plumber, ailing for two years, admitted December 11, 1890. Symptoms—headache, cough, and expectoration of green phlegm; loss of appetite; wasting. Has had three attacks of hæmoptysis. Used to weigh 10 st. 10 lbs; present weight, 9 st. 6 lbs. His father died of "inflammation of the lungs." Is the subject of a complete fistula in ano. *Purple* line along the gums from lead and tubercular delicacy combined. Profuse night sweats and restlessness. Physical signs in both apices, and of a cavity in the left lung.

At his urgent request, the patient was inoculated on December 13,

with only 3 mgrms. of Koch's fluid. This caused rigors, vomiting, violent headache, pains in the inguinal glands, and soreness about the arms. The clinical chart subsequently showed a marked hectic fever. The sputa were examined before and after the injection, and were found to be full of bacilli—they were nummular, green, and fœtid.

The inoculation was not repeated, and this patient left hospital somewhat improved on January 2, 1891.

CASE IV.—*Non-tubercular Chronic Pneumonia—No Bacilli in Sputum—No reaction with Koch's Fluid.*

Mrs. C., aged forty-two, from the Co. Kilkenny, complaining of her chest for past six months. Admitted December 15, 1890. Some time ago she had severe hæmoptysis, and lost flesh quickly; partial dulness over left lung; conduction of heart sounds, and at times loud moist crepitation; breathing often asthmatic. No bacilli were found in the sputa, which were those of bronchiectasis—muco-purulent, greenish, and fœtid.

On December 26, 1890, 5 mgrms. of the one-per-cent. solution were injected. There was no reaction whatever. The patient left hospital on December 30, pronounced to be non-tubercular.

This case illustrates the diagnostic value of Koch's method.

CASE V.—*Tuberculosis of Lungs—Second stage—Hæmoptysis after a small dose—Treatment discontinued.*

Michael F., aged twenty-four, single, a farmer living in the Co. Galway, admitted December 15, 1890, with a history of seven months' illness. Bad family and personal history—father and a brother died of decline; he, himself, used to drink hard. Cough and phlegm; night-sweats; loss of flesh; bad appetite; occasional slight hæmoptysis, in streaks. Weight reduced from 11 st. 3 lbs. to 10 st. 4 lbs. Extensive signs of infiltration and softening in both apices. A few large-sized tubercle bacilli found in the sputum.

December 20.—A dose of only 3 mgrms. was given at 11 a.m. Hæmoptysis set in next day, and continued, more or less, for ten days. The patient became weaker, and left hospital for his home on January 11, at his own request.

This case conclusively proved the danger of the remedy in an advanced case. It was used only at the patient's special desire, he having travelled to Dublin from Galway in order to have himself treated by Koch's method.

CASE VI.—*Tubercular Phthisis—Early stage—Seven injections—Patient improving.*

Albert D., aged twenty-one, single, living at Greystones, Co. Wicklow, a carpenter by occupation, admitted December 22, 1890. His illness

began six months previously with a cold, which he neglected. There is an unfavourable family history, his father and a paternal aunt having died of pulmonary consumption. Height, 5 ft. 11 ins. Present weight (December), 11 st. 12 lbs. Complains of cough, "bad spit," loss of appetite, increasing weakness. He has not lost flesh to any extent, and he does not look phthisical, nor does he sweat. There is a red line along the gums, and the finger-tips are clubbed. He has a special distate for fatty foods. P. 86; R. 24; T. 98·4°. Physical examination reveals an extensive consolidation in the right apex—the signs being, moderate dulness on percussion ("flatness" of note), want of resiliency, increased vocal fremitus and resonance, conduction of heart sounds, dry crepitus on deep inspiration. Urine normal. The sputa were nummular, phlegmy, and abounded with tubercle bacilli.

The first injection, of only 3 mgrms., was made at 11 a.m. of December 30. The reaction was marked; temperature rising to 101·4°, pulse 100, resp. 30; headache and increased cough and expectoration. The sputa became ropy, or glutinous, brownish, and frothy, and charged with bacilli. Next day there was hæmoptysis, the "lumps" of sputa being streaked and tinged with blood. The usual loose crepitation was heard over the affected portion of lung.

The subsequent injections resulted as follows:—

Date 1891	No. of Injection	Dose	Max. Temp.	
Jan. 2	2	5 mgrms.	100·0°	Increased cough and spitting of blood.
„ 8	3	8 „	101·0°	—
„ 13	4	8 „	100.0°	Softer & louder crepitation.
„ 20	5	10 „	100·7°	—
„ 26	6	10 „	100·2°	—
„ 29	7	10 „	99·4°	—

In this case the reactions have been gradually lessening in intensity, and the patient's constitutional state is becoming more and more satisfactory.

Such are the six cases which have been so far under my care. Without dogmatising, I think we may draw the following conclusions from these "Clinical Records":—

1. That the remedy is most potent, producing severe constitutional and local symptoms in seven hours in tubercular phthisis, even in small doses.
2. That its diagnostic efficacy is undoubted.
3. That its use in advanced phthisis is inadmissible.

4. That in early pulmonary tuberculosis there is reason to believe that its use is beneficial.

There is nothing original in these views, as I am well aware, except that they are based on my own observations, and every man should observe for himself.

One puzzling fact connected with the effects of this treatment is that, notwithstanding the marked improvement in the patients' general state, and the change in certain of the physical signs in the lung, the dulness on percussion seems to undergo but little alteration. I would suggest that this apparently disappointing circumstance is due to the temporary infiltration of the affected lung tissue with the exudation products of an intense inflammatory congestion—a peripneumonia, the result of a "coagulation-necrosis," such as Virchow has spoken of in his recent communication to the Berlin Medical Society.

The lesson is obvious—in pulmonary tuberculosis, to inject only small or moderate doses of the lymph, and at sufficiently long intervals. In this way, also, the risk of sowing new foci of tubercular mischief may be avoided.

ART. X.—*The Civil Service Insurance Scheme.*[a] By E. MACDOWEL COSGRAVE, M.D., F.R.C.P.I.; Physician to Cork-street Fever Hospital, and Whitworth Hospital, Drumcondra; Professor of Biology, Royal College of Surgeons; Hon. Sec. Section of State Medicine, Royal Academy of Medicine.

EXACTLY a year ago a paper was read by the President of this Section[b] (Dr. A. W. Foot) on "The Medical Selection of Lives for Assurance," and he expressed his opinion, that before long the medical examination would be greatly extended, and information on many additional points would be required.

Since the reading of Dr. Foot's paper a remarkable development has been made in the contrary direction from that predicted, and for the past four months a large number of proposals have been received and accepted, not only without any medical examination, but even without any declaration on the part of the proposer that he believed himself to be in good health.

[a] Read in the Section of State Medicine of the Royal Academy of Medicine in Ireland, February 13, 1891. [For the discussion on this paper, see page 267.]

[b] Transactions Royal Academy of Medicine. Vol. VIII. Pp. 417.

The history of this development is briefly as follows:—

Last spring some members of the Civil Service met to consider the possibility of establishing a scheme to make provision for the widows and orphans of civil servants. They felt that it would be necessary, first, to make arrangements for favourable insurance on lives of civil servants, and, having canvassed the Service, and obtained a large amount of support, they resolved to establish a Civil Service Insurance Fund.

The companies were next approached, and, on the 9th of last June, a letter was addressed to each of the 98 British Life Insurance Companies, inviting them to tender for the business of the proposed society. A large number of tenders were received, and, after careful examination, that of the North British and Mercantile Insurance Company was accepted.

The chief advantages offered to civil servants by the North British and Mercantile Insurance Company are as follows:—

An uniform discount of 15 per cent. off all premiums (first year's and renewals) on life assurances effected under any of the Company's tables.

The privilege of paying premiums quarterly at yearly rates.

The next two advantages offered are so important, of so novel a nature, and so contrary to the ordinary methods of insurance business, that I give them in the exact words of the Civil Service Insurance Society:—

"(3.) In the case of men now in the Service who may insure within the next two years, no medical examination or information as to family history will be required, except that, where the proposal is for a sum over £1,000, or where, during the two years in question, the total insurance is increased so as to amount to more than £1,000, the Company reserves the right to make certain inquiries and, if necessary, to require a medical examination. It is anticipated that a very large number of assurances will be effected during this period of two years—sufficient, in fact, to form an average of health perfectly safe both for the Company and the insured, especially among a body of individuals already medically examined on entering the Service.

"(4.) Similarly, no medical examination or information as to family history will be required in the case of men hereafter entering the Service and insuring within five years of their medical examination for admission to the Service."

The proposal form is so short and simple that I shall read it

in extenso. It will show that no attempt is made to replace the usual medical examination by any declaration or other test:—

"Under agreement between the Company and the Civil Service Insurance Society, the Company undertakes, during two years from 15th September, 1890, to issue policies (not exceeding £1,000 on one life), without medical examination, upon any civil servant coming within the definition stated below. And it was further agreed that, after the period mentioned, policies should still be issued, up to the £1,000 limit, upon any such civil servants who have within five years preceding the date of the policy passed the medical examination required by the Civil Service Commissioners on entry to the Service.

"The term 'civil servant' is held to include, for insurance purposes, every person stationed permanently within the United Kingdom who has been certified or registered by the Civil Service Commissioners (or filling a situation for which such certification or registration is now [1890] required), and who, before entering the service of the State, was declared by the Civil Service Commissioners to have passed the medical examination required by them.

"*Life Proposal to the North British and Mercantile Insurance Company* (*for use by Civil Servants, as above described*).

"1. Full Name and Residence of the person whose life is proposed for Assurance,

"2. Present position, and where employed in H.M. Civil Service,

"3. Date of entry into Civil Service,

"Whether examined and passed medically prior to entry,

'4. Date and Place of Birth,

"5. Sum to be Assured,

"6. Description of the Assurance desired,

"7. With or without Participation in Profits,

"8. If the Policy be desired in the name of another person, state his or her full Name, Description, aud Residence,

"I declare that the above particulars are truly set forth.

"Signed at this day of Eighteen hundred and ninety ."

From this it will be seen that the Company, not content with offering 15 per cent. rebate on all premiums, is actually bidding for increased work by accepting good, bad, and indifferent lives,

just as they offer. The only historical precedent I can discover is the account of the foundation of the Pilots' Benevolent Association, so humorously described by Mark Twain in "Life on the Mississippi;" but in that case there was a monopoly, and a limited number to deal with.

A circular, setting forth the advantages offered, has been brought under the notice of all civil servants, so that a large number of people in the following classes will come forward and be insured at ordinary terms, less 15 per cent. :—

(α) Those whose lives have been already rejected.

(β) Those who were asked to pay higher premiums on account of illness, family history, or other cause, and who did not complete the insurance.

(γ). Those who, knowing their lives were bad, have been afraid to face medical examination.

That this is actually happening I am able to show. For some years I have been medical officer to a company doing a large business with civil servants, and have had from time to time to reject some lives and advise the loading of others. I have inquired, and find that almost every life in which the insurance was not made from either of the above causes has applied to be insured under the new scheme, sending in the above proposal form, with no mention of present state of health, or of previous rejection or loading. These cases included two of valvular disease of heart, one of commencing pulmonary tuberculosis, and several of poor physique and defective family history.

The present experiment derives importance from its extent. The Civil Service contains a very large number of individuals, and the number of applicants for insurance will probably be large. In the future the numbers of those joining will probably continue large, as civil servants for the first five years of their service come under its provisions, and during these years many marry, and wish to insure. Consequently (if this experiment succeeds) the number of civil servants who will be subjected to medical examination before insurance will never again be large. If the plan succeeds with civil servants other bodies will follow the example, and competition will compel other companies to do without medical examination.

The danger of such a course was well shown in an interesting extract quoted by our President last year:—"The disastrous consequences of dispensing with a medical examination was shown

by the late Dr. Brinton,[a] who examined a number of insurances effected without medical examination. From three or four pages of these cases he collected no less than forty instances of death from pulmonary consumption, at periods which averaged eighteen weeks from the date of effecting the policy, but often did not exceed three, four, or five weeks. The average loss to the Company on these forty policies was exactly forty times the premiums paid."

Why is medical examination objected to? Not from the largeness of the fee, which is only a small percentage on the first year's premium, and is usually borne by the Company. It probably is that people do not like to face the doctor just as they do not like making their wills, but this very dislike is often an element in favour of the companies, as it is not first-class lives that most usually shirk examination. Like the proverbial ostrich, many avoid recognition of the truth, hiding the danger from their eyes and not themselves from the danger.

The object of the Company is to get increased business. By most companies money is spent in advertising, and certainly the North British and Mercantile Insurance Company have got a gigantic advertisement, well distributed in a paying field, and can afford some financial risk in return.

Other companies will be affected; the necessities of competition will keep them from letting so large an amount of business be picked up by one Company, and if they think they can safely do so they will bid for some of it, and companies doing business with civil servants will probably relax the rules concerning medical examination. As other bodies—such as the Army and Navy—take the matter up, this relaxation will be extended, and thorough medical examination become less and less frequent.

There would be an advantage to the community if this insurance was compulsory, as it would encourage thrift; but even in such a case it should only deal with those entering the service, and the good lives should not be called upon to pay for those which are already defective.

To bad lives there is only one possible danger—danger to the financial stability of the Company—but the standing of the North British and Mercantile Insurance Company is so good that this danger may be said not to exist, consequently to bad lives the scheme is of great benefit.

[a] Brinton. Medical Selection of Lives for Assurance.

To good lives the scheme is not so tempting. True, there is a rebate of 15 per cent., but other companies offer equally low rates, and sound though the financial standing of the Company is, the bonus additions cannot be so large if they have to pay a larger proportion of claims—as undoubtedly they must do as the bad lives drop in. It may, therefore, possibly happen that whilst the Company gets the bad lives it may not attract the good ones. Under such circumstances the scheme would become unworkable. It must be remembered that the bad lives now joining are not the only bad lives to be expected. Five years may make a great difference in a man's chances of life, and many a man who has passed the doctor and entered the Civil Service, has within five years suffered from rheumatic fever, with cardiac complications, from scarlatina, and subsequent renal disease, from tuberculosis, or from other diseases which would prevent other offices accepting his life at any rate. Such persons will avail themselves of the Scheme.

I have thought it worth while bringing the scheme before the Academy, as the experiment is being tried on such a large scale, and in such a drastic manner—medical examination, personal declaration, reference to friends, all being abolished. Medical men, seeing as they so often do, money troubles harassing the sick and the bereaved, are always anxious to encourage thrift; but it remains to be proved whether this experiment is in the direction of thrift. May we not ask is it fair that good lives should be handicapped? May we not ask whether, if certain rates can take good and bad lives, good lives should not be set apart as before by medical examination, and the lower rate they deserve be charged to them? If the present experiment proves successful, it shows that up to the present good lives have been greatly overcharged, and I believe the greater encouragement to thrift will be to lessen the charges as far as is compatible with safety, and so encourage early and consequently more universal insurance.

ART. XI.—*The Provincial Hospitals of Ireland.* By Z. JOHNSON, A.M., Univ. Dublin; L.R.C.P.I.; F.R.C.S.I., &c.; Senior Medical Officer to the Kilkenny County Infirmary; ex-President of the Irish South Eastern Medical Association.

WHEN we look around us and survey the ample provision which exists at the present day for the hygienic needs, both remedial and prophylactic, of our population—when we contemplate our admir-

ably organised system of medical relief, our county hospitals for the lower middle classes, our fever hospitals for infectious diseases, our union hospitals for the destitute poor, and our ubiquitous dispensaries for all, it is not easy to realise the state of things when, not very long ago, Ireland had no medical institutions except her Dublin hospitals, and one at Waterford, founded and endowed by King John for the treatment of lepers, and known as the Leper Hospital to this day.

Provincial hospitals there were none, in the proper sense. A few small local charities were supported here and there by private liberality, fever hospitals were unknown, and dispensaries were not thought of till many years after the first provincial hospitals had been in effective operation.

In consequence of the primitive condition of the roads and the want of public conveyances, the Dublin hospitals were at this time practically inaccessible to all but those who lived within easy and moderate distances, while in the country parts doctors were scarce and to be found only in the county towns; so that we, with our modern conveniences and developments, cannot help wondering how the majority of the people managed in the case of accident or illness, and must conclude that the sick too often fared very badly under such circumstances.

It may not be altogether uninteresting to survey more minutely the state of affairs at the time immediately preceding the institution of the first provincial hospitals in Ireland, and some of the phases of provincial medical practice at that time; and to do so I must ask the reader to travel back with me to the period just preceding the introduction of a bill in the Irish House of Commons making legal provision for the maintenance of hospitals in the rural parts of the country, just 125 years ago.

At the time now alluded to it must be understood that the stage coach system had not been fully developed in England, and had not reached this country at all. Consequently, those splendid highways, familiar to the present generation as our mail coach roads, and which were the offspring of the mail coach system, had not sprung into existence. The only means of intercommunication were the bosheens and the old, narrow, winding, undulating roads, with deep dykes at either side, which seem to have been constructed by men of aspiring genius, emulous of rivalling the lark, who, we are told, "at Heaven's gate sings"—for they took their road invariably over the tops of the highest hills; while the

geometrical law, that two sides of a triangle are greater than the third, appears never to have dawned on the philosophy of those gentlemen, to whom, no doubt, is due the inspiration of the old song, which tells us that—

> "The roads all about are so long, they say,
> That you've nothing to do but keep finding your way,"

but adds, for our consolation,

> "That two of our miles are equal to three,
> Which shortens the road in great degree."

At this time the roads were not only narrow and arduous, but they were extremely rugged and badly kept. There were no such things as Road Sessions or County Surveyors. Spring vehicles were almost unknown, and scarcely available, in consequence of the rugged state of the roads. Hence, travelling was mostly accomplished on horseback. These were the palmy days of the now obsolete pillion, while the "yellow po shay," celebrated in song and story, was a luxury to which only the wealthy could aspire.

In those days highway robberies were of frequent occurrence, and consequently travelling was a matter of danger. Journeys now accomplished in some three hours took two days, and it was usual for parties leaving home to make their wills and arrange their affairs previous to encountering the dangers of the road.

Such were the conditions of travelling at the time to which I now refer. The circumstances of provincial medical practice were necessarily much affected by them.

It was usual for the country doctor then to travel on horseback, equipped with a knapsack, which was supposed to contain some changes of raiment, as well as such professional requisites as were most likely to be of use in his excursions. He periodically started from home on a tour of two or three days' duration, visiting the neighbouring minor towns and villages by appointment. At these places he held his preconcerted levees, while he usually spent the night at the house of some of the country gentry; for doctors were so scarce in those days that they were looked on as privileged personages, and their visits were regarded as notable events. The grandfather of one of the most eminent provincial physicians at present in Ireland pursued his practice in this manner; and a very successful and eminent practitioner, dead now some forty years, told the writer that he was in the habit, in the early part of his

career, of leaving home on such tours for two or three days at a time, and availing himself of the hospitality of his clients, on whom he billeted himself at night, while he held his not unprofitable levee at some neighbouring village in the daytime.

But although regarded as privileged, these peripatetic doctors were not all equally welcome. It was said of some of them that they slept in their boots, and of one old gentleman, in the county Wexford, that he not only slept in his boots but that he used to forget to take off his spurs, to the great detriment of the household linen. But doctors at these times, like angelic visitations, were few and far between, and eccentricities, which would not be tolerated for a moment now, were submitted to then as matter of necessity.

Such was the state of affairs when, in 1765, the Irish Parliament passed a Bill enabling the grand juries of the several counties (Dublin and Waterford excepted) to provide funds, by half-yearly assessment, for the support of a hospital in each county, and which proposed hospital was designated by the Act of Parliament "The County Infirmary." When we consider that there were not any dispensaries, or fever hospitals, or public medical officers at this time, it cannot be wondered at that this measure was regarded as a public boon, and received with great avidity.

The grand juries lost no time in availing themselves of the power conferred on them. The county gentry with eager promptitude contributed voluntary subscriptions for the erection of the necessary buildings. Thus, in the course of a very few years, Ireland, which had previously been wholly devoid of provincial hospital accommodation (the case of Waterford excepted), became almost suddenly supplied with thirty-two provincial hospitals. The year 1766 saw several established, and in 1767 the Kilkenny County Infirmary was completed and thrown open for the public benefit, the necessary funds having been almost exclusively contributed by the county gentry, as appears by a list of the original donors still preserved.

A law was next passed which restricted the office of County Infirmary Surgeon to those who should have passed an examination and been pronounced duly qualified by a board of surgeons in Dublin, constituted for the purpose; for at this time the Irish College of Surgeons was not in existence. Subsequently, when the present College of Surgeons had been duly organised, the law was modified, and the office of County Infirmary Surgeon was limited to licentiates of that body, and them only.

It is easy to understand that under these circumstances the county infirmary surgeons were at once invested with a prestige which placed them at the head of the provincial profession. Enjoying almost exclusively the practical advantages which hospital experience confers, and an almost complete monopoly of operative surgery, it is not to be wondered at that they at once rose to a high position in public estimation.

For some seventy-five years the county infirmaries continued to be the only surgical hospitals outside of Dublin. It was not for many years after their institution that the fever hospitals were established; but these were reserved exclusively for fever cases, and in very many instances the county infirmary surgeon was also the medical officer of the fever hospital. Thus for some seventy-five years the county infirmaries and the county infirmary surgeons held the field, the advantages of their position and monopoly of practical hospital experiences retaining for them their place in public confidence.

That monopoly, however, was not destined to last for ever, and we find that about the year 1840 a law was passed which in a very short time provided the country with some 180 provincial hospitals, conveniently dispersed throughout the country, additional and perfectly distinct from the 32 county infirmaries. These hospitals, located mostly in the centre of each poor-law union, are now well organised, well-conducted, and efficiently officered. The prestige which formerly attached to the county infirmary surgeon by virtue of the comparative isolation of his position, and his monopoly of operative surgery, henceforth was to be shared with numerous competitors, supplied, at the public expense, with every appliance requisite for the efficient discharge of their onerous duties.

From the institution of the county infirmaries, in 1765, to the origin of the Poor Law, in 1840, a great advance had been effected, and there can be no doubt that society had benefited greatly by the facilities the county infirmaries afforded to the humbler classes of obtaining medical and surgical assistance, otherwise without their reach. But soon after the Poor Law came into operation these benefits were largely multiplied, every union becoming the centre of a medical and surgical hospital, and where there had been but one county hospital formerly, we find as many additional ones established as there might happen to be unions in the county.

This multiplication of hospital accommodation has led some ratepayers, anxious to keep down taxation, to question the necessity

of maintaining any longer the county infirmaries, on the assumed grounds that the Poor Law hospitals were sufficient for the wants of the population.

It is not the object of this paper to disparage for one moment the great usefulness and efficiency of the present Poor Law hospitals, or the competency of their excellent and hard-worked, but inadequately remunerated medical officers, whose conscientious diligence in the discharge of their onerous duties is as exemplary as their intelligence and scientific zeal are conspicuous.

But I think it is not difficult to show that the county infirmaries have a distinct and separate mission, and that a great misfortune and cruel injustice would befall a most important and deserving section of the community, if, by any chance, the county infirmaries, which have worked so well for nearly a century and a half, and shed such benefits around, should be abolished.

The most uncompromising partisan of Poor Law interests, or the most cheeseparing economist, cannot deny that there are large and numerous classes of poor, but respectable, people, who are not suitable recipients of Workhouse relief. Such are small farmers, small shopkeepers and traders, artisans, respectable servants, industrious labourers—in a word, the self-supporting and self-respecting classes.

It is equally undeniable that multitudes of these poor people are, every day, heard to declare that they would "die in the ditch," as they themselves graphically declare, rather than subject themselves, or the members of their families, to the unavoidable associations and degradations of the union poorhouse.

And surely it is not the interest of society that the noble sentiments of self-respect and honourable independence should be expunged from the breasts of the poor but respectable lower classes.

They are but too well aware of the dangers which await them and their families if forced by necessity to become inmates of the poorhouse. The very nature and constitution of the Poor Law renders it inevitable that once they enter there they must be liable to be brought into contact with the lowest and most degraded characters. The benefit of the House dare not be denied to the vilest outcast who pleads destitution. The plea of absolute destitution confers a legal right which dare not be disregarded but at the risk of serious legal retribution. Hence it is that the poorhouses are notoriously used as a *refugium peccatorum* by the most

degraded characters, and as a common place of temporary resort for those who wish to hide their shame for a convenient season. It was elicited by a Parliamentary Commission some years ago that procuresses were in the habit of availing themselves of this legal right of entry, for the purpose of suborning young females and decoying them out of the house, for the purposes of their nefarious trade.

Is it, then, to be wondered at that any decent poor man should recoil from subjecting his wife or daughter to the liability of being brought into contact with vicious and degraded companionship, such as thieves, professional mendicants, tramps, prostitutes, *et hoc genus omne?* To exclude such parties from the poor-house, and from the poor-house hospital, is an absolute impossibility. The law insists on their admission, if only they plead destitution. As a natural consequence they must always constitute, more or less, a proportion of the inmates of every union poorhouse.

The interests of society then surely demand that there should be hospital accommodation for the industrious and self-supporting classes, free from all danger of contamination, and from association with degraded characters. Our cities are well provided with such, and the provincial districts of wealthy England possess admirable hospitals, distinct from the poor-law establishments, supported by their own estates and by munificent bequests and endowments. But provincial Ireland has no suitable hospital accommodation for the self-supporting and respectable poor but its County Infirmaries. It is specially for the benefit of this class that they ought to be maintained and supported. The true *raison d'être* of the county infirmaries of the present day is, the preservation of these classes from the dangers of evil association, contamination, and the annihilation of proper self-respect and sense of independence, while the suppression of these institutions would inflict cruel consequences on the decent poor, and insure the moral deterioration of the self-respecting and self-supporting classes.

Surely no one with the interests of society at heart could regard such a prospect without serious concern. However, sentimental considerations carry little weight with prejudiced opponents or rigid economists, and it becomes necessary to examine into the conditions, circumstances, and cost of the county infirmaries, in order to ascertain whether any substantial pecuniary gain would accrue from their suppression.

According to a very painstaking return dealing with twenty-

seven county infirmaries for the year 1885[a] (five counties being excluded, either as having no infirmary or being circumstanced differently from the rest), it appears that a daily average of 805 beds were in occupation throughout the twenty-seven institutions during that year; that during the preceding 10 years private donations had amounted to nearly £28,000, while during the same period £17,359 had been expended in improvements and repairs of the existing buildings; that an amount nearly equal to one-third of the county presentments had been contributed from private sources, and that the gross amount of the presentments levied off the twenty-seven counties bore a ratio of a little more than one halfpenny in the pound on the valuation, and less than a halfpenny per acre.

For this very moderate assessment 11,371 intern patients had been treated during the year, of whom nearly 7,000 came distances of over five miles, and some 15 and 20 miles to their respective infirmaries.

It seems scarcely wise to propose the suppression of tried institutions which disseminate such widespread good, at so small a cost to the country. Fortunately the disposition to oppose the county presentments, which arose almost altogether from motives of short-sighted economy, appears to have died out very much of late years. It is to be hoped that the special use and proper object of the county infirmaries is more fully understood, and that the ratepayers have become cognisant of the cruel injury which would be inflicted on the industrious and self-supporting poor by the extinction of such valuable institutions, and which a saving of a halfpenny in the £ on the valuation, and less than a halfpenny per acre, could never justify in the view of any humane person.

There is no doubt that the numbers relieved at the county infirmaries would be much greater than at present but for the terms required by Act of Parliament for the qualification of a governor. The law requires each patient to be provided with a governor's ticket of recommendation,[b] and also requires those tickets to be filed and preserved. But it also fixes the subscription of a yearly governor at three guineas, and that of a life governor at twenty. The consequence of this high rate of sub-

[a] Allusion is here made to the ample and elaborate return compiled by Dr. Hercules MacDonnel, of Dundalk, in 1886.

[b] Except in the case of recent accidents, which are always admitted solely on their own merits.

scription is that the gentry and well-to-do residents are deterred from subscribing, and hereby it happens that frequently, throughout large districts of a county, the proper objects for infirmary relief have not the means or opportunity of procuring the necessary governor's ticket. A reduction in the present legalised subscription is most desirable, and would largely extend the usefulness of these institutions by rendering them more accessible to those for whom they are intended. But unfortunately the amount of the subscription is at present obligatory, and cannot be altered without a special Act of Parliament, and Acts of Parliament are so expensive that the cost amounts to prohibition in this case. Many years ago the Queen's County Infirmary and the Tipperary Infirmary obtained special legislation for themselves, reducing the subscription to £1 1s. for an annual governor, and 10 guineas, or 10 consecutive annual subscriptions, for life governors, and with the greatest advantage to the public, thereby popularising the institutions, and largely increasing the numbers both of the governors and the applicants relieved.

It is much to be regretted, also, that the presentments, on which the County Infirmaries are mainly dependent for their support, are at present optional with the ratepayers and grand jurors, and may be refused by either of them. The institutions are thus left too much at the mercy of hostile parties, influenced by considerations altogether apart from the merits of the case, and sometimes even by personal motives. Thus, on one occasion, a ratepayer succeeded in throwing out the half-yearly presentment for the County Kilkenny Infirmary, solely because, under a frivolous misconception, he entertained a grudge towards the medical officer, and sought to gratify his revenge by closing the establishment, irrespective of the claims of the suffering poor. Consequently the wards were nearly empty for the ensuing half year, and continued so, until, at the subsequent sessions and assizes, the funds necessary for carrying on the work of the establishment were restored. Nor was this a solitary instance of the precarious footing on which the County Infirmaries stand under the existing laws. On other occasions, and in other counties, the necessary presentments have occasionally been opposed, from motives altogether unworthy of men professing regard for the public good, or the sufferings of their fellows—sectarian and political prejudices, unhappily, have been sometimes allowed to interfere.

There can be no question, then, that it would be most desirable

that our County Infirmaries were made independent of such possibilities, and placed on a footing analogous to our Lunatic Asylums, by a peremptory assessment. We have no suitable hospital accommodation in the provinces of Ireland for our respectable and uncontaminated poor but our County Infirmaries, and no hope of those munificent endowments and bequests which render the provincial hospitals of wealthy England independent of taxation. Lately a munificent bequest of £90,000 was left in trust, but exclusively for Dublin hospitals. Our provincial hospitals have no chance of such good fortune; such windfalls are the every-day experience of English hospitals, as the records of charitable bequests testify. But we are too poor to hope for such lucrative contingencies.

It is to be hoped, then, that legislative measures shall yet be adopted which shall place the maintenance of our County Infirmaries on a sure and permanent basis, and, at the same time, facilitate the creation of governors, and thereby the admission of the proper objects. In the meantime, as I know that dispensary officers and clergymen are often unable to procure governors' orders, from the causes alluded to, I shall take on myself to procure the necessary document for any case recommended to me by my professional brethren, as unsuitable for domiciliary treatment, and requiring the systematic discipline and care to be had only in hospital, and perfectly unattainable in the dwellings of the poor.

I trust my brethren of the County Kilkenny will not hesitate to avail themselves of my assistance whenever they wish to transfer such cases to our County Infirmary.

MEDICAL TITLES.

One T. H. Ennis being charged in the Rockhampton Police Court (Queensland) with practising as duly qualified, without legal qualification, his counsel pleaded guilty; but was anxious to explain the true significance of the letters which defendant had been in the habit of appending to his name. M.D. meant only "money down;" F.R.S., "Fosterer of Real Science." He used other imposing capitals also, as Q.H.B., which meant "Queensland Herbalist Botanist," and L.C.B.G.M.Q., signifying "Late Curator, Botanical Gardens, Maryborough, Queensland." The Bench was of opinion that the plea in mitigation aggravated the offence, and fined Mr. Ennis £20, or six months in default of payment in three days.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Report upon the State of Public Health and the Sanitary Work performed in Dublin during the Year 1889; *also Twenty-Eighth Annual Report upon the Analysis and Inspection of Food, &c.* By Sir Charles A. Cameron, M.D.; D.P.H., Cambridge; M.C.P.; Past President and Professor of Hygiene and Chemistry, Royal College of Surgeons; President of the British Public Health Society.

Sir Charles Cameron's Report upon the state of public health in Dublin during 1889 reached us in December, 1890. The author explains this delay in the publication of his Report in a note appended to the Table of Contents. The Report seems to begin at page 49, so that it is not as large as would appear to be the case from the paging.

The sanitary, or rather the insanitary, state of the Irish metropolis affords abundant material for a Report, and the Chief Medical Officer of Health might write a volume with advantage in telling the medical profession and the citizens generally something of the poverty, squalor, dirt, and disease which are so familiar to all dwellers by the Liffey—their cause and the best means of removing them.

We might learn from his facile pen why dens of filth and immorality—for nowadays dirt and vice, not sanctity and vice, are bedfellows—are not shut up. Is it because of legal difficulties? or is it a tender, considerate kindness to the wealthy and pious owners of such dens? Can any information be obtained from him or from the Sanitary Authority of the city as to the letting of old houses, on the north side particularly, to roomkeepers, without the least attempt to make suitable sanitary provision for their teeming population? The accommodation for roomkeepers in Dublin is a disgrace to modern sanitary science, to the Corporation of Dublin, to the laws of our country, and to civilisation. Much could be done—much should be done—to remedy this disgraceful condition

of affairs, and it is painful to read how inadequate are the steps taken to effect this, as narrated in the Report. Defective as is the law, it could be more efficiently administered, and probably in no other city is a most energetic administration of the sanitary laws so necessary as it is in Dublin.

Sir Charles Cameron deserves every credit for his efforts to improve the sanitary state of the tenement houses in Dublin; but, alas, the outer fringe of the evil alone is touched upon in the Report before us. "Hygeia" receives the tithes of mint, anise, and cummin, but the spirit of missionaries is wanting in her apostles in the Corporation.

What is being done in the way of prevention to protect life from fire? The roomkeepers use cheap lamps and common paraffin oil. They are not the most steady portion of the population, and everything speaks of the awful risk of fire. We have an excellent fire brigade, but by the time any fire-escape would reach one of the old and crowded tenement houses of Dublin, whole families might be burnt to death. There are such houses, with their wealthy landlords lifting handsome incomes from them, in our city. In these houses the closet arrangements are insufficient; there is seldom or never any bath accommodation, and no local or household protection from fire exists. The owner of a number of these houses lately declared that the profit from each house was over £100 a year.

Surely the efforts of the Dublin sanitary officers might well be redoubled. They ought to possess more of the spirit of enthusiasm in their work. We admit that something—a good deal—has been done to improve the dwellings of the suffering poor. Yes, but the work has been largely done by individual effort. When the officials acted they did so after much stimulation by the lay press and by that useful body—the Dublin Sanitary Association.

From what is stated above it will be seen that we have formed but a poor opinion of the Report before us. It is not based upon a broad large-minded view of sanitation, but is a beggarly narration of details.

Dublin—old, dirty, disease-laden Dublin—needs active, efficient sanitary enthusiasts to contend with the disease-breeding foci of the city. We print the names of the miserable sinners who water the milk or substitute margarine for butter, but when will the sanitary authorities publish the names of those who demand rent for rooms which are fever dens? When will the sanitary authorities

show that they are in earnest about their work? When will the men and women in good social position, who fatten and grow rich on the rents of fever dens and brothels, be brought to a reckoning? The inspection of the roomkeepers' dwellings in the city is well-nigh farcical. We know the houses from roofs to cellars, and we know the perfunctory way in which the duty of sanitary inspection is too often fulfilled. We are told at page 98 that the results of this inspection "are to be seen at page 75," but this is a grim reference to a Table of the deaths at different ages registered in Dublin in each of the years 1879–89.

In the name of humanity and on behalf of the disease-stricken poor of our city, we appeal for a more efficient application of the provisions of the Public Health Acts in Dublin—that city with its beautiful surroundings of mountain, plain, and sea, but with its sewage-soaked subsoil and filth-reeking alleys, the death-rate of which rises to pestilence-level should the summer sun shine with more than wonted warmth for a fortnight, or a few days of biting frost and fog in winter fall upon the land.

Beitrage zur Augenheilkunde. Von PROF. R. DEUTSCHMANN, in Hamburg. I. Heft. Mit 10 Abbildungen im text. Hamburg: Leopold Voss. 1890. Pp. 80.

PROFESSOR DEUTSCHMANN'S name is so well known in connection with his masterly treatise on Sympathetic Ophthalmia, or "Ophthalmia Migratoria," as he prefers to call it, that anything proceeding from his pen will be read with the attention which it deserves.

The present pamphlet is the first part of a series of contributions to ophthalmology, in which, as the author states in the preface, he will publish the result of investigations, clinical and pathological, which possess more than the ordinary amount of interest.

The first paper, which occupies 20 pages, deals with a subject of great practical importance—namely, antisepsis in relation to injuries of the eye. The prognosis of an injury, so far as the preservation of the eye is concerned, depends, according to Deutschmann, less on the position of the wound than on its nature—*i.e.*, whether the instrument which caused it was septic or not. Purely mechanical results may, of course, follow from an injury—such as cataract and detachment of the retina. Certain parts of the eye,

moreover, offer special facilities for the entrance and propagation of germs. The vitreous humour is a good nutrient material for them, and unfortunately it is usually beyond the reach of antiseptics. The ciliary region is also dangerous in this respect, on account of its great vascularity and also from the tendency there is, in this position, to the formation of cystoid cicatrices, which may at any time open up a path for secondary infection. Practically considered, all wounds should be treated as if they were septic, as infection may take place from the conjunctival sac, even though the eye were injured by a piece of red-hot steel, which must be aseptic. The author believes that, by a thorough local antisepsis, combined with a sublimated suture in fresh scleral wounds—the latter in order to prevent the formation of a thin cicatrix—many eyes can be preserved which would otherwise be condemned to enucleation. Two remarkable cases are recorded, illustrating this statement. Foreign bodies, which must be infectious, but do not give rise to inflammation, probably have the infectious material rubbed off in their passage through the coats of the eye. An example of this is given in which the eye was penetrated by a grain of corn, which was extracted and examined in vain for micro-organisms by cultivation methods.

Two cases of sympathetic ophthalmia are related, in one of which gelatine cultivations from each eye demonstrated the presence of staphylococci. The author seems to prefer evisceration to enucleation in these cases.

That carbolic acid (1–50), introduced on instruments, may give rise to an inflammatory process, which is not due to infection, is believed to be proved by a case of cataract extraction, in which an exudation into the anterior chamber was removed and transferred to nutrient gelatine, which, however, remained sterile.

The author does not seem to have had any experience of the recent practice of intraocular injections of perchloride of mercury in sympathetic disease.

In the second paper, two cases bearing on the course of the fibres in the optic nerve are recorded, one of which offers strong clinical evidence of the correctness of Vossius' investigations on the path of the macular fibres. Deutschmann's patient, who had central choroido-retinitis, exhibited an atrophic sector-like patch in the outer portion of each optic disc.

The third contribution relates to an instance of homonymous hemianopsia caused by a depressed fracture of the parietal bone,

the symptom being probably due to the blood gravitating and pressing on the optic tract.

The condition described in the fourth paper is a very rare one; it is entitled "Amaurosis from auto-intoxication in a patient with carcinoma." A man, aged fifty-four, suddenly lost his sight without any other symptoms, and without any abnormal ophthalmoscopic appearances in the eyes. He died shortly after from carcinoma of the stomach. *Post-mortem* examination revealed nothing in the brain or nerves to account for the blindness. The kidneys, liver, and spleen were normal. Oppenheim relates a similar case in the "Charité Annalen for 1888," in a paper entitled "Ueber Hirnsymptome bei Carcinomatose durch nachweisbare Veränderungen im Gehirn," and attributes the loss of vision to the action on the visual centres of a poison generated by the carcinoma—an explanation which Deutschmann adopts in his case, of course from negative and purely hypothetical reasons.

The three final papers contain pathological descriptions of cases of detached retina, hæmorrhagic glaucoma, and intraocular tumours. Amongst the latter is a myosarcoma of the ciliary body, of which scarcely half a dozen cases are on record. We shall look forward with pleasure to the appearance of Part II.

Heredity: Health and Personal Beauty. By JOHN V. SHOEMAKER, A.M., M.D., Professor of Materia Medica, Pharmacology, Therapeutics, and Clinical Medicine, and Clinical Professor of Diseases of the Skin in the Medico-Chirurgical College of Philadelphia; Physician to the Medico-Chirurgical Hospital; Member of the American Medical Association, of the Pennsylvania and Minnesota State Medical Societies, the American Academy of Medicine, the British Medical Association; Fellow of the Medical Society of London, &c. Philadelphia and London: F. A. Davis. 1890.

THERE are some books that irritate the reviewer from the first page to the last. To commence with, what can be more annoying than a list of medical societies to which the author belongs. In the present case Dr. Shoemaker informs the reader that he is a member of the British Medical Association, which is synonymous with saying that he subscribes for the *British Medical Journal*—a purely cash transaction, which gives no more inconvenience and requires no more brains than the purchase of a German Ph.D.

But the essential cause of annoyance is the attempt to exhibit a knowledge of his subject, when the book is a painful proof of the fact that the author is unequal to the self-imposed task. He deals with the subject of personal cleanliness in Chapters XV. and XVI.; and as we read them we are driven to the conclusion that Dr. Shoemaker either did not know why personal cleanliness was not only neglected but despised by Christians, or that, knowing it, he had not the courage of his convictions, and withheld the true statement.

Two things promoted the cultivation of dirt by early and mediæval Christians—for their filthiness of habit far exceeded what could possibly result from a disregard of cleanliness—they desired to prove their contempt for this world and all things temporal, and to emphasise their separation from the bath-loving, dirt-abominating heathen.

In their caves, separated from the world, eaten up with selfishness, they continuously besought a birthright in the spiritual world by evidencing to God and man that their breasts never harboured a generous feeling, and that the body made in His image had been degraded by them as much as it was in the power of man to effect.

The more dirt the more grace, and the student who knows the history of the first six centuries, and recalls the description of personal filthiness in which Clementina rejoiced, and for which Stylites and his imitator, David, acquired sanctity, need not be told how much modern civilisation was hampered by the teaching and ensample of the early saints.

In the great cities of the East, even after the introduction of Christianity, personal cleanliness was attended to, but the bath-attendants were all heathens, and the women who were in attendance on the bathers gradually deteriorated in morals, until "bath-woman" and "whore" became synonymous terms. Christian women now looked on their filthiness not alone as an evidence of their faith but of their purity.

In mediæval times no attempt to promote cleanliness was made until the Caliphate were overthrown, and the Turk was driven from the walls of Vienna.

During the time of Henry VIII. women were directed by Bullein to grease their faces two or three times a week, and to carry sweet-smelling herbs to deaden the offensive smell of their unwashed skins. Borde, about the same time, not only describes

but pictures the filthiness of all classes at the period in Great Britain and the Continent.

Cleanliness in Christian countries is the direct outcome of the recognition that man's true place is amongst men—as a helper and a brother. When he has learned this lesson he begins to respect himself as well as his fellow-man, and "tubbing" becomes universal. Women come to quickly recognise that no amount of Christian virtue will overcome the repugnance of men to indescribable filthiness, even such as in the past would have won beatification.

Dr. Shoemaker has published a big book and a worthless book; and, if he does not intend it for an advertisement, we cannot guess at his object in placing it in the market.

A Practical Treatise on Nervous Exhaustion (Neurasthenia); its Symptoms, Nature, Sequences, Treatment. By GEORGE M. BEARD, A.M., M.D.; Professor of Electro-Therapeutics in the New York Post-Graduate School and Hospital; Fellow of the New York Academy; Member of the American Neurological Association, of the New York Neurological Society, &c. London: H. K. Lewis, 136 Gower-street, W.C. 1890.

THE restless activity that marks the commercial world of America in the latter half of the nineteenth century has familiarised our American brethren with nervous diseases. Neurological Societies have sprung up in the principal centres of commercial activity, and numerous books on neurasthenia have been published by American physicians.

Until recently Europe supplied the medical profession in America with text-books on nervous diseases, but the peculiarities of American life, especially in the Eastern States, demanded original investigation, and the book before us is the product of Dr. Beard's study of the diseases of the nervous system in New York.

Although in this country the race for wealth is not carried on at such a fever heat as in the United States, nevertheless we from time to time meet with patients who suffer acutely from exhaustion of their nerve energy, and who run the risk of unbalancing their minds by excessive application to professional or business work; consequently such a book as Dr. Beard's is very welcome, and we are prepared to gladly take knowledge from any and every source, and thankfully acknowledge it; but we have a decided bias for

information briefly and clearly given—padding is objectionable, and there is too much of it in Dr. Beard's book. The best chapters in the volume are II. and V., the former of which deals with the symptoms of nervous exhaustion, and the latter with the treatment and hygiene of the disease.

The treatment commends itself by its sound practical common sense, and much stress is rightly placed on the necessity for beginning the treatment of the disease as early as possible. The author goes to some trouble to inculcate the value of physiological rest, and we believe that the advice cannot be too constantly kept before the profession. No agent is as effective for good in nervous diseases as rest.

The book supplies a want, and will prove a valuable addition to the library of the physician, particularly if he does not possess a copy of Erb's Monograph, or Grasset's "Maladies du Systeme Nerveux."

On the Natural Mineral Waters and Spa of Leamington. By R. Eardley Wilmot, M.B. Leamington: W. H. Smith. 1890. Pp. 28.

This is a reprint, in pamphlet form, of a paper read before the annual meeting of the British Medical Association, and is of the usual character, containing analysis, favourable descriptions of the climate and surrounding scenery, and quotations from various writers who have spoken in praise of the town.

Pocket Medical Lexicon. By John M. Keating, M.D. (Univ. of Pa.); Fellow, College of Physicians, Philadelphia; Visiting Obstetrician to the Philadelphia Hospital, &c.; and Henry Hamilton. With Addenda: consisting of the Etymological Factors common in Medical Terminology; Comparative Tables of Metric and Apothecaries' Weights; a List of Poisons and their Antidotes; and Abbreviations used in Prescriptions. London: H. K. Lewis. 1891.

This is a very neat, beautifully-bound, clearly-printed little volume, just such as might be carried in the pocket or placed on the writing table for reference.

Medical students attending clinical lectures will find it a useful book of reference.

It is not absolutely perfect—nothing is. We cannot approve of Colles' fracture being called Barton's. Mr. Colles is justly entitled to the credit of first having described the fracture. Chloralamide appears in its proper place in the Lexicon, but chloralforamide is not mentioned. We do not approve the long penultimate syllable in Angina; and it can hardly be contended that modern custom justifies a wrong quantity in Latin or Greek.

Pasteur and Rabies. By THOMAS M. DOLAN, M.D., F.R.C.S.Ed. London: George Bell & Sons. 1890.

DR. DOLAN is well known as a rabid opponent of Pasteur's treatment of hydrophobia. He, therefore, needs no introduction to the medical profession in this country. He has tabulated all the cases which have resulted fatally after inoculative treatment by Pasteur, and from these has deduced, without a trace of evidence or the slightest attempt at logical reasoning, a wholesale and sweeping condemnation of this experimental treatment, which, in many instances, according to the author, has induced in the patient the paralytic form of rabies and death.

Two quotations from the book will suffice:—"Though I have had *hundreds (sic) of dog-bitten patients since* 1885, I have treated them at home, as I had done since 1869, and I have not sent a single patient to M. Pasteur. I have not had a death from hydrophobia *as the result of my scepticism*, though I have had some of the same class of patients as those described in the list furnished by the English Hydrophobia Commission, and treated by inoculation." The fallacy underlying such a statement is obvious; and Dr. Dolan is very hard on his opponents for a much less glaring misstatement of statistics. Again, Dr. Dolan says he has resisted the attempt to force Pasteur's method on the medical profession by the weight of authority, "just as I have opposed the bacteriological school, which is trying to replace clinical medicine by experimental therapeutics. To kill germs in the peritoneum after grave surgical operations, carbolic acid has been used, and the patients have been killed as well as the germs; to kill the germs in puerperal fever, corrosive sublimate was used, with similar results. This is now old medical history." When a writer not only admits, but actually boasts of, the possession of such a mental attitude, criticism is useless, while to attempt to reason would be but to emulate the labours of Sisyphus.

PART III.

SPECIAL REPORTS.

REPORT ON
MATERIA MEDICA AND THERAPEUTICS.[a]

By Walter G. Smith, M.D. Univ. Dubl.; Physician to Sir Patrick Dun's Hospital; King's Professor of Materia Medica and Pharmacy, School of Physic, Trin. Coll. Dubl.

Salicylic Acid.—It has long been known that the salicylic acid prepared by Kolbe's reaction from commercial phenol (carbolic acid) contains a variable quantity of impurity or impurities. Among these impurities there are sometimes found a red colouring matter, unaltered phenol, and apparently other substances, which had been associated with phenol in the crude carbolic acid. These substances it has been proposed to remove by dialysing the acid, on the assumption that, unlike salicylic acid, they are uncrystalline, and therefore incapable of dialysis. Therapeutic observation has, however, disclosed the fact that both the commercial salicylic acid and that purified by dialysis produce effects, when administered to the human subject, which are not observed to result from the administration of the pure salicylic acid prepared from the methyl salicylate contained in the natural oil of wintergreen. Many years ago the late Mr. John Williams demonstrated experimentally that the artificial salicylic acid, as met with in commerce, contained an admixture to the extent of some fifteen per cent. of another acid which he considered was probably derived from cresylic acid. The subsequent observations of Professor Latham—that artificial salicylic acid had a different effect when administered medicinally from that of the natural acid—increased the

[a] The author of this Report, desirous that no contribution to the subjects of Materia Medica and Therapeutics should remain unnoticed, will be glad to receive any publications which treat of them. If sent to the correspondents of the Journal they will be forwarded.

This Report is based upon an article by the writer in the "Year-Book of Treatment" for 1891.

doubt as to the fitness of the artificial acid for medicinal purposes, but beyond that no great attention was paid to the matter. At a still later period Professor Charteris ascertained, from direct experiments with the artificial and natural salicylic acids, that there was a distinctly different physiological effect when one or other of them was administered, and that while the natural acid produced no bad effects, the artificial acid was decidedly toxic. It therefore became important to examine more closely the characteristics of the adventitious substance or substances associated with the salicylic acid obtained synthetically from carbolic acid, and to seek for some efficient means of purification by which the objectionable admixture might be eliminated.

It is to this latter problem that Professor Dunstan has directed his attention, and he has succeeded in defining the nature of the above-mentioned impurity, separated from artificial salicylic acid by Mr. John Williams, as well as that of another impurity subsequently obtained and sent to him by Mr. Williams. Professor Dunstan has also found a third impurity in the course of his investigation, and these have been submitted to physiological tests by Professor Charteris, with the result of showing that two of them produce poisonous effects when administered to animals. The experiments instituted for the purpose of separating these impurities from artificial salicylic acid have shown that the method adopted by Mr. John Williams of fractional crystallisation of the calcium salts is not well adapted for attaining that object, and after many unsuccessful attempts Professor Dunstan has devised a method of purification which appears to be capable of separating the true salicylic acid from the other acids which are associated with it in the artificial product met with commercially.—(*Pharm. Journ.*, Nov. 15, 22, 1890.)

Chloroform, Action of.—It would not be possible to give in a few words an abstract of recent work upon this most important subject. Suffice it to point out that the first portion of the "Report of the Hyderabad Commission" (*Lancet*, January 18, 1890) deals with the much-disputed question—"Is it possible by the inhalation of chloroform to cause sudden stoppage of the heart before the respiration is affected?" The result of the investigations carried out upon several hundred animals, dogs and monkeys, was, that in every case where chloroform was pushed, the respiration failed at a time of from one to ten minutes before the heart ceased beating, or, in other words, that chloroform always kills by asphyxia.

But Professor M'William's report, presented to the Scientific Grants Committee of the British Medical Association (*Brit. Med. Journ.*, 1890) is in sharp conflict with this view. He appears to demonstrate, in a very unequivocal way, that chloroform exerts a direct influence upon the heart—depressing its energy, diminishing its tone, and dilating its chambers. Moreover, such a depressing effect may be brought about by chloroform when given mixed with abundance of air (under 4 per cent. of chloroform vapour), and when the amount of the anæsthetic administered is not sufficient to abolish the conjunctival reflex. The mode of cardiac failure under chloroform is not a sudden arrest of the rhythmic action, but a more or less sudden dilatation and enfeeblement of the organ, causing the rhythmic contraction to be ineffective. Examples are given of cardiac failure, while the respiration went on for many minutes.

Mr. Alexander Wilson, of Manchester, contributes some excellent critical notes upon the "Report of the Hyderabad Commission." His observations throw light upon the apparent contradictions between the results obtained by experiments on animals and those obtained by clinical experience on human subjects. He points out that the extensive experiments of the Commission have left the chloroform question in the following condition:—It was not found possible to directly paralyse or affect the heart by chloroform in some 600 administrations. Death from chloroform is due apparently to paralysis of the vaso-motor and respiratory centres; probably one or both of these may be affected. This paralysis may set in very suddenly, with hardly any warning; it is as far beyond treatment as cardiac paralysis, and it is as fatal. It cannot be too strongly insisted that the work of the Commission gives us no greater confidence in chloroform than we had before. Its physical and chemical properties remaining the same, the danger of permitting the patient to inhale an overdose will remain as great as ever.—(*Med. Chronicle*, Feb. and April, 1890).

Professor Wood, in his able address (*Brit. Med. Journ.*, Aug. 16, 1890), also traverses the results of the Hyderabad Commission. He claims that the fact is well established, both by experiments upon animals and by reliable observations upon man, that chloroform is capable of causing death either by primarily arresting the respiration or by primarily stopping the heart, but that commonly both respiration and cardiac functions are abolished at or about the same time.

Professor Wood sums up in a few words the rules for the proper treatment of accidents during anæsthesia.

Avoid the use of all drugs except strychnin, digitalis, and ammonia.

Give the tincture of digitalis hypodermically.

Draw out the tongue, and raise up the angle of the jaw, and see that the respiration is not mechanically impeded.

Invert the patient briefly and temporarily.

Use forced artificial respiration promptly, and, above all, remember that some at least, and probably many, of the deaths which have been set down as due to chloroform and ether have been produced by the alcohol which has been given for the relief of the patient.

Recent Hypnotics and Analgesics.—This important class of drugs is engaging the attention of pharmacologists and therapeutists both at home and abroad, and the Therapeutic Committee of the British Medical Association have taken hypnotics as the subject of investigation for the current year. Dr. Leech, of Manchester, introduced for discussion the subject of hypnotics at the Leeds meeting of the Association in 1889. His excellent paper (*Brit. Med. Jour.*, Nov. 2, 1889) sets forth so clearly and succinctly what is known of hypnotics, and what is required to be known, that it deserves to be studied, and a few of his observations may be fitly reproduced here. His communication dealt chiefly with urethane, methylal, amylene hydrate, sulphonal and paraldehyde—*i.e.*, hypnotics connected with the fatty series. In regard to hypnotic power, the order of potency seems as follows:—(1) sulphonal; (2) amylene hydrate; (3) paraldehyde; (4) urethane; (5) methylal. None of these drugs equals chloral hydrate in the certainty of its effects. Comparing the doses quantitatively, it appears probable that a dose of sulphonal has, as a rule, about the same soporific action as three-fourths its weight of chloral; and von Mering is of opinion that half a drachm of amylene has the same power as 15 grains of chloral or 45 minims of paraldehyde. The effects of sulphonal are sometimes very enduring, and Dr. Leech has known a patient sleep twenty hours after 20 grains, and troublesome nervous effects may last many days after a single dose.

It is with regard to the influence on circulation and respiration that the newer hypnotics differ so markedly from the older. The newer drugs are to a large extent devoid of the evil influence which chloral, for example, is liable to exert upon the heart and

respiration. They very rarely affect the circulation and respiration unless given in doses such as are not used medicinally.

Dr. Leech finds that urethane, in doses of 20 to 30 grains, is often very successful in slight cases of insomnia, and of all the hypnotics it is the least likely to give rise to dizziness, headache, or other discomfort.

With regard to the use of hypnotics in mental disease, Dr. Leech inclines to paraldehyde as the best for continuous use, and Dr. Clouston likewise regards it as the purest and least harmful hypnotic when insomnia is marked and intractable.

Urethane.—Dr. Gordon, of Aberdeen, has made a valuable experimental contribution to the pharmacology of urethane—a drug which has not lately been in much demand. He has also examined its actions as a hypnotic on subjects in good health and in disease when sleeplessness was a factor. As the result of the administration in a considerable number of cases of insomnia it had a distinct hypnotic action when given in doses of 30 to 60 grains. The sleep which it produced was always pleasant. The patient awoke without any confused feeling, never complained of headache, loss of appetite, or any disagreeable sensation, but, on the contrary, expressed gratitude for the refreshing sleep. It was noticed, however, that in many of the cases a rapid tolerance of the drug took place. It was repeatedly found that, although a dose of 30, 45, or 60 grains, when administered for the first or second time, produced some hours of tranquil sleep, when the same dose was given on the succeeding night it was found that no hypnotic action followed.

Several friends who tested the action of the drug in the insomnia of cerebral cases in asylum practice, found that in large doses—namely, 60 to 100 grains, it was unreliable; in many case its hypnotic action was not noticeable after the first few doses. No period of excitation was observed to follow the administration of any dose, and, when the drug acted, the onset of sleep was within ten to fifteen minutes.

In point of reliability, urethane compares unfavourably with paraldehyde, which has no specially marked period of toleration, and which, in many cases, can be taken for months with equally reliable results. This unreliability of urethane seems to have been noticed by various observers, among others Otto and König.

No hypnotic effect was produced upon healthy subjects by administration of large doses, 40 to 60 grains, in the morning. In

large and continued doses it is liable to cause anorexia, and even to induce vomiting.—(*Brit. Med. Journ.*, Nov. 2, 1889).

Of the compounds *somnal* and *phenylurethan*, introduced respectively by Radlauer and Giacomini, not enough is known to speak with certainty as to their value.

Aristol.—Some time ago iodol was introduced as a pleasanter substitute for the malodorous iodoform, and now a new competitor appears under the name of aristol. It is dithymol-diiodide, and is prepared by adding a solution of iodine in iodide of potassium to an alkaline solution of thymol. It contains 45·8 per cent. of iodine. It is a red-brown powder, odourless, unirritating, insoluble in water and glycerin, slightly soluble in alcohol, and freely so in ether and fixed oils. It is decomposed by warmth and by exposure to light.

Eichhoff first tested it therapeutically, and reported very favourably of its action in various skin diseases—viz., eczema, ringworm, ulcers, and lupus. He used a 3 to 10 per cent. ointment made with vaseline.—(*Monatsh. für prakt. Dermat.*, 1890.) In a subsequent paper he records his further experience of the drug, and concludes that it is perfectly harmless, and is of great service in psoriasis, eczema, ringworm, and ulcerating syphilis and lupus.—(*Med. Chron.*, Aug., 1890, from *Deutsche med. Wochens.*, 1890.)

Although it has been before the profession such a short time, an extensive series of publications upon its use has appeared, and in the main they confirm and add to the favourable results recorded by Eichhoff. An abstract of recent papers is to be found in *Med. Chron.*, July, 1890.

In France, Drs. Brocq and Gaudin found it to favour cicatrisation in a most striking manner. In chronic rhinitis and eczema it has proved of much service in the hands of Drs. Hughes and Lowenstein; and in gynæcological practice Dr. v. Swiecicki, of Posen, reports very favourably of it. Likewise from Spain come good reports, from Drs. Buscalla, Bufill, and Estapé.—(*Therap. Monatsh.*, Sept., 1890.)

Creolin.—This antiseptic and disinfectant seems to be holding its place, and is well spoken of by Dr. Otis (*Boston Med. and Surg. Journ.*) and Dr. Lebowicz (*Revue Gén. de Clin. et de Thérap.*, 1889.)

But it should be remembered that it has given occasion to several cases of poisoning. Three cases are detailed by Dr. Dinter (*Therap. Monatsh.*, Dec., 1889). In a case under Dr. Ackeren, a man swallowed nearly 9 oz. of creolin, and became unconscious,

but ultimately recovered (*Brit. Med. Journ.*, Jan. 11, 1890, from *Berlin. klin. Woch.*).

Dr. Zielewicz, of Posen, has formed a high opinion of the merits of creolin, and has used it for the last two years in his private and hospital practice.

According to Henle's analysis, creolin consits of four groups of compounds, viz.—(1) soaps, (2) creolin oil, (3) phenols, (4) pyridines (*Therap. Monatsh.*, April, 1890).

Dr. Schwinz has obtained satisfactory results from creolin in the treatment of diseases of children (*Brit. Med. Journ.*, Nov. 7, 1889).

Ichthyol.—Professor Gadde thinks that ichthyol is entitled to a foremost place among recent drugs, and his observations are quite in accord with those already published by Unna. He especially recommends it in anomalies of the circulation with dilatation of the blood-vessels.—(*Therap. Monatsh.*, 1890.)

Dr. Freund, of Strassburg, has a high opinion of its value in the treatment of inflammatory affections of the female sexual organs.—(*Berl. klin. Woch.*, 1890.)

Diuretin.—Under this name a sodio-salicylic compound of theobromine, corresponding to one of the so-called soluble salts of caffeine, has been introduced as an advantageous diuretic (*Apoth.-Zeit.*, Dec. 14, p. 1338). According to Dr. Gram, of Copenhagen, theobromine is a diuretic, acting directly upon the kidneys, differing from caffeine in not affecting the central nervous system, and therefore not causing sleeplessness and restlessness. It is said to have produced satisfactory diuresis in cases of renal and heart disease in which digitalis and strophanthus have been without effect. But as the free alkaloid requires about 1600 parts of water for its solution it is not readily absorbed, and gives rise to disturbance of the stomach. Diuretin, on the other hand, is alleged to produce the beneficial effects of theobromine without the unpleasant symptoms. It is described as occurring as a white powder containing 48 per cent. of theobromine, dissolving with the aid of heat in less than half its weight of water, and remaining in solution after the liquid has cooled. It is administered to the extent of about 6 grammes daily in 1 gramme doses.—(*Pharm. Journ.*, Dec. 28, 1889.)

Orexin (ὄρεξις, appetite).—Penzoldt believes that in this substance the true stomachic has been found, one which has the power of exciting the appetite, aiding digestion, and stimulating absorption of the products of digestion.

The hydrochlorate of orexin (or phenyldihydroquinazoline) occurs under the form of colourless or nearly colourless needles. Orexin is almost insoluble in water, but the hydrochlorate is readily soluble in warm water. It is sharply irritant to the nasal mucous membrane, has a bitter taste, and leaves a tolerably strong burning sensation upon the tongue.

The author employs the following formula:—

Hydrochlorate of orexin - - -	2 grammes.
Extract of gentian - - -	q. s.
Powdered marsh-mallow - - -	q. s.

Made into 20 pills. From 3 to 5 daily. Or it may be given in wafers.

Experiments on thirty-six patients showed that in many cases the drug restored lost appetite. This effect rarely occurred after the first dose; usually it came on after several doses given in the course of a few days. Orexin has a prompt effect in anæmic and cachectic individuals, in patients on whom operations have been performed, in those suffering from phthisis, &c. The drug is of special value in commencing pulmonary tuberculosis, and Dr. Penzoldt in many such cases observed a considerable increase of the weight of the body. No disagreeable after-effects had been observed, except occasional burning along the œsophagus and rare and transitory vomiting (*Therap. Monatsh.*, Feb., 1890). Dr. Martins, of Breslau, has published the results of a large number of experiments made with a view to determine how far the claims recently put forward on behalf of orexin as an appetite-producer have a foundation in fact (*Deutsche med. Woch.*, May 15, p. 427). In twenty cases the pills were administered without informing the patients as to the reason why they were given; in five cases the patients were told that the pills contained something that would improve the appetite, the results being checked by the use of pills containing no orexin, but made up to resemble the orexin pills; in three cases orexin pills and plain pills were administered comparatively without any statement to the patients, and in seven other cases the conditions were varied in different ways. Out of the twenty-nine cases in which orexin was administered the appetite showed some improvement in five, but not to any considerable extent; in the other twenty-four cases the orexin did not seem to exercise any influence upon the appetite; whilst in five cases an improvement in appetite followed the administration of pills although they contained no orexin. Dr. Martins considers there-

fore that the general results of his experiments have not afforded any distinct and indisputable evidence of the action of orexin in the direction of improving the appetite.—(*Pharm. Journ.*, May 31, 1890.)

Chloralamide.[a]—This hypnotic has attracted a good deal of attention, and the verdict, upon the whole, is in its favour. A good abstract of the literature is given by Dr. Leech.—(*Med. Chron.*, April, June, 1890).

Halasz (*Wiener med. Wochensch.*, 1889, 38, 39) reports that it has no influence upon the circulation, and recommends its employment even when the heart is weak and irregular. In doses of 30 to 45 grains it is a useful but not a certain hypnotic, and seldom produces any serious after effects. Occasionally, headache, giddiness, and nausea follow its administration.

Alt, on the other hand (*Berl. klin. Woch.*, 1889, 36), found the drug ineffective in twelve out of forty-one cases. He noted, also, that doses larger than 45 grains were apt to cause, even in healthy people, dizziness and headache, or a condition like that of intoxication, which, however, does not last long.

The action of chloralamide upon the circulation and respiration has been examined by Langgaard and by v. Mering and Zuntz (*Therap. Monatsh.*, Oct., Dec., 1889, Jan., 1890). The former finds that a distinct decrease in blood-pressure is caused (in rabbits) by the drug, and that it should only be cautiously used in cases of heart disease. But v. Mering and Zuntz dissent from these conclusions, and they point out that since sleep itself depresses the blood-pressure, every hypnotic must to a certain extent lead to this effect. They deny also the lowering effect of chloralamide upon the respiratory centre, observing that the effect of sleep is to decrease the production of carbonic acid, which is the stimulant of the centre. The difference of opinion between these observers is not very serious, and Langgaard allows that in medicinal doses this action of chloralamide will usually be unimportant, but in some pathological conditions might lead to danger. And Robinson (*Deutsche med. Wochensch.*, 49, 1889) has several times observed dangerous symptoms—viz., diminished tension and increased frequency of pulse—after the administration of chloralamide.

[a] A substance, unfortunately named *chloralimide*, has been lately described by Pinner and Fuchs, and is said to be an active antipyretic and analgesic. It is obtained by heating chloral-ammonia.—Pharm. Journ., March 29, 1890, from Compt. Rendus, cix. 817.

Umpfenbach has likewise met with unpleasant symptoms of depression after chloralamide, and, in three cases, erythematous eruptions (*Therap. Monatsch.*, Feb., 1890). It is best ordered an hour or more before going to bed, and may be taken as a powder, washed down with milk, water, or coffee, or in solution with syrup, or it may be dissolved in wine or beer.

In the Richmond Asylum. Dublin, Dr. Cope (*Dublin Journ. Med. Science*, Feb., 1890) has found chloralamide to be a valuable hypnotic for the insane. Its solubility in water is 1 in 14. A dose of 25 to 35 grains was sufficient to cause sleep in patients suffering from melancholia and chronic mania, but in cases of acute mania 40 to 50 grains were required. No recognised ill-effects followed the continued use of this drug for eight days. In one case only was its use followed by giddiness and sickness, with dry, brown tongue. Sphygmographic tracings showed no evidence of lowering of blood-pressure.

Sulphonal.—No remedy of recent date has excited more rapid interest than sulphonal, since the announcement of its hypnotic qualities by Kast, in 1888.[a] It has been described as a medicine which produces something nearly resembling a natural sleep, with no bad effects, save that it leaves behind it a somnolent tendency easily renewed. Altogether the reports in its favour outweigh those of the opposite tendency.

Naturally it was welcomed by those who treat insanity, and extensive experience has confirmed its utility in this class of practice. An interesting discussion upon the action of sulphonal took place at the Medico-Physiological Society of Paris (reported by Dr. Ireland in *London Med. Recorder*, Dec. 20, 1889). The majority of the speakers, including Drs. Voisin, Febvre, Garnier, Pachoud, and Claret, while acknowledging occasional ill results, testified to the value of sulphonal in mental cases, and it is noticeable that several of them prescribed the drug in very large doses — viz., 4 and 5 grammes. On the other hand, Dr. Marandon de Montyel has either the merit of seeing the dangers of sulphonal, or has been singularly unfortunate in his trials of the drug. He even goes so far as to say that, in doses of 3 to 4 grammes, sulphonal is not a medicine but a poison. It often failed to induce sleep, and in a large number of cases it evoked alarming symptoms in the intellectual functions, and caused disorders of the motor system and of the digestive tract.

[a] See a valuable "Contribution to the Study of Sulphonal," by Dr. J. Gordon.—Brit. Med. Journ., March 29, 1890.

Dr. Knoblauch (*Therap. Monatsh.*, Nov., 1889) substantially agrees with Dr. de Montyel. Neither does Dr. Malshni, of Moscow, think highly of sulphonal in asylum practice, and he does not regard it as a very sure or satisfactory hypnotic (*London Med. Recorder*, Nov., 1889). Dr. Knaggs reports a fatal case of sulphonal poisoning (*Brit. Med. Journ.*, Oct. 25, 1890). But Dr. Matthes' report of it, from von Ziemssen's clinic, is more encouraging, and the summary of his observations is :—(1) Sulphonal is a useful hypnotic, though not absolutely certain in its effect. (2) It is preferable to other hypnotics on account of its odourlessness and tastelessness, and its negative action on the vital organs. (3) Undesirable secondary symptoms are infrequent and unimportant. (4) The dose must be varied according to individual idiosyncrasies. For most patients 1 gramme suffices to produce a hypnotic effect without secondary symptoms. If the latter occur, the dose must be made smaller. (5) It is advisable to give the drug at least an hour before going to bed, as its effect is slow. (6) If pain of non-neuralgic origin or distressing cough is the cause of agrypnia, sulphonal is useless. But in many neuralgic affections it appears to have a very good effect.—(*London Med. Recorder*, May 20, 1889.)

Dr. Field remarks that, in America, so much prejudice against chloral has been awakened that physicians felt the need for something to supersede it. Sulphonal is, in his opinion, a first-rate hypnotic. Dr. Field's experience of sulphonal extends over fifteen months, during which he prescribed it in 200 cases. As to dose, he considers that 10 grs. are commonly enough, 15 grs. are often too much. A comforting point about sulphonal is that with frequent use the effective dose may be diminished. It may be laid down as a rule that a patient who does not sleep with 20 grs. will not sleep with any dose. Sulphonal is especially indicated for cases of sleeplessness due to worry or brain disturbance of any kind, and for those cases where chloral and opium are contra-indicated.—(*London Med. Recorder*, Jan., 1890.)

Dr. Steiner thinks highly of sulphonal, and relates an interesting case of a patient of his, aged fifty-four, who, within eleven months, took 300 grammes of sulphonal for the relief of sleeplessness. No bad symptoms were at any time noticed, and the patient gained steadily in health and nutrition.—(*Therap. Monatsh.*, Oct., 1889.)

In favour of sulphonal speak also Dr. Franz, of Breslau (*Therap. Monatsh.*, März, 1890), and Dr. Rackel.

Trional and Tetronal.—A few months since Messrs. Baumann & Kast published (*Zeitsch. f. phys. Chemie*, xiv. 52) the results of a number of experiments made upon dogs with compounds allied to sulphonal, from which they drew the conclusions that the hypnotic action of this class is a function of the ethyl groups in the compound, and proportionate in the intensity to their number, and that the SO_2 group exercises no influence in this direction. Messrs. Barth and Rumpel have attempted to ascertain how far this statement is confirmed by the effects produced upon human patients by the administration of trional and tetronal, containing three and four ethyl groups respectively, as compared with those produced by sulphonal, which contains two (*Deut. med. Woch.*, August 7th, p. 32). In order to make the comparison as close as possible, the experiments with trional and tetronal were made upon patients that had already taken sulphonal with advantage. The results obtained corresponded to the experience obtained upon dogs only so far as to show that both trional and tetronal possess pronounced hypnotic properties when administered to human beings; but they did not confirm the theory as to their quantitative action, as practically the same doses of the new compounds as of sulphonal were found to be required to produce a certain effect, instead of one-half or two-thirds as expected. At present, Messrs. Barth and Rumpel content themselves with saying that probably the indications for the use of trional and tetronal correspond with those for the use of sulphonal, but that in certain nervous conditions which are refractory towards sulphonal the other compounds might prove more effective. As a hypnotic, tetronal was in fourteen cases superior to sulphonal, in six cases equal, and in four cases inferior. Trional in seventeen cases was superior, in six cases equal, and in seven inferior. No injurious bye-effects were observed in any of the 220 cases in which trional and tetronal were administered.—(*Pharm. Journ.*, August 30th, 1890).

Euphorine.—Dr. Sansoni (*Therap. Monatsh.*, September, 1890) has made a number of observations on the action of euphorine in disease. Professor Giacoso has given the name of euphorine to phenyl-urethan.

$$CO \begin{matrix} OC_2H_5 \\ NH(C_6H_5), \end{matrix}$$

a new substance derived from aniline. It is a white, crystalline powder, with faint aromatic odour and slight taste, almost insoluble in water, but quite soluble in weak alcohol. Sansoni first tested

the antipyretic effect of euphorine. In fever, due to a large number of causes, the temperature fell quickly within an hour; the fall reached its maximum usually in three hours, and lasted for five to seven hours, but sometimes not so long, and at other times longer. The subsequent rise of temperature was usually sudden and accompanied by rigours. Its antipyretic action is often greater in certain individuals than in others, and hence it is advisable to begin with small doses. Doses of 15 to 20 grains in twenty-four hours can generally be taken without bad results. It is best to begin with a dose of 3 grains. In rheumatism 15 to 30 grains daily caused disappearance of the pain, swelling, and fever. In chronic cases the good results were slight. In a few cases euphorine acted well as an analgesic, but on the whole the success must be considered small. In chronic ulcers and in ophthalmia the powder proved itself a better antiseptic than any other which the author had tried. On the whole, as an antipyretic, anti-rheumatic, and analgesic, euphorine seems to be inferior to many older remedies of the same nature, and unless future experience bears out the high character given to it by Sansoni as an antipyretic, there is little likelihood of its ever becoming a useful drug.—(Suppl. *Brit. Med. Journ.*, October 18th, 1890.)

Hypnal.—The incompatibility of antipyrin with chloral hydrate is well known, and by the combination of the two is formed a compound not possessing the properties of either of its constituents. Recently Herr Reuter showed that by heating antipyrin with chloral hydrate a crystalline compound could be obtained, which he described as trichloraldehydphenyldimethylpyrazol, and alleged to be without therapeutic value. According, however, to the experience of Dr. Bardet, recently communicated to the Société de Thérapeutique (*Nouv. Rem.*, March 24th, p. 135), this crystalline compound, which he proposes to call "hypnal," partakes in a marked degree of the properties of both its constituents. Administered in twenty-two cases in doses of one grain (two grains being rarely required) he found hypnal to induce sleep as readily as chloral hydrate, whilst in those instances where the insomnia was caused by pain it seemed to have the same anodyne effect as antipyrin. In addition, spasmodic symptoms, especially cough, appeared to be much abated under its influence. Dr. Bardet states that hypnal consists of about 45 per cent. of chloral and 55 per cent. of antipyrin. It has been found by M. Bonnet that if concentrated solutions of the two constituents be shaken together a

considerable deposit of crystals is formed without passing through the oily stage, and this deposit, by recrystallisation from water, can be obtained in enormous rhombic crystals. If the chloral used be in excess, the crystals take the form of prismatic needles. The compound is said to be free from odour or caustic taste—in fact, according to M. Bonnet, it is tasteless; but Dr. Bardet says that while it is free from the strong taste of chloral hydrate and the bitterness of antipyrin, it has a saline taste, a slight but not disagreeable sensation of chloral becoming perceptible on the tongue after some time. Hypnal is said to dissolve in six to eight times its weight of warm water and melt at 58° to 60°; it is therefore much less soluble than chloral hydrate or antipyrin.—(*Pharm. Journ.*, May 3rd.)

Exalgin.—This drug belongs to the same group therapeutically as antipyrin, antifebrin, and phenacetin as an analgesic. It is unsuitable as an antipyretic, because, in full doses, it is apt to produce untoward symptoms. The favourable reports of MM. Dujardin-Beaumetz and Bardet regarding its pain-relieving virtues have been confirmed by others, in England and abroad. Professor Fraser, of Edinburgh, speaks highly of it. Of 88 separate administrations of exalgin, in 67 of them pain was relieved. In the groups of "facial neuralgia" and "cardiac angina," 48 out of 52 administrations were successful. Dose, ½ grain to 4 grains in solution in rectified spirit.—(*Brit. Med. Journ.*, February 15th, 1890.)

Dr. Atkinson regards exalgin as valueless (*Brit. Med. Journ.*, June 14th, 1890), but *contra*, Drs. Herschell and Farrar produce satisfactory evidence of its value in relieving and curing cases of severe and obstinate pains (*Brit. Med. Journ.*, July 19th, 1890). Also, Drs. J. S. Holden, H. G. Molony, and A. H. Walker.

Heinz (*Berl. klin. Woch.*, No. 11, 1890) found it efficacious, in 4 to 7 grain doses, in relieving various forms of pain. Rabow (*Therap. Monatsch.*, Mai, 1890) extols it in migraine and all forms of headache. He reckons that about 3½ grains of exalgin are equivalent to 15 grains of antipyrin. An obstinate case of trigeminal neuralgia, in which phenacetin had been repeatedly given without effect, yielded to the second dose of 3½ grains of exalgin. In severe aural pain, and in trimetus, he considers 3 to 4 grains of exalgin to act as quickly and surely as a subcutaneous injection of morphine. The drug was less successful in sciatica and muscular rheumatism. In no case did any seriously unpleasant symptom follow its use; sometimes transitory dizziness and noises in the ear.

However, Drs. Bokenham and Jones (*Brit. Med. Journ.* Feb. 8th, 1890) record a case in which alarming prostration and cyanosis occurred in a young woman after doses of 2 to 6 grains three times a day, continued for a fortnight. Amongst the bye-effects which have attended it as an analgesic are the following:—Sweating, but this is not common with careful dosing (3 to 6 grains). More frequent is giddiness, which appears in a number of cases in from a quarter to half an hour from the administration; this symptom may amount to a sense of drunkenness, with swimming in the head and noises in the ears. In Bokenham and Jones's case there were darkening of vision, and later, delirium and loss of consciousness. Convulsions occurred in Hepp's case of phthisis in which 4·5 + 7·5 grains were administered. Disturbances of digestion, epigastric discomfort, nausea and vomiting, are rare. Blood changes have not been witnessed in man, but in animals there has been diminution of oxyhæmoglobin. Of rashes there have been observed only erythemata. Prevost counsels great caution in using this aniline derivative, which, as such, may easily damage the blood. He, as well as Heinz, Dujardin-Beaumetz, and Bardet, considers fever to be a contra-indication.—(*Brit. Med. Journ.*, Suppl., Oct. 11th, 1890.)

A curious instance of dangerous and distressing symptoms from 3 grains of exalgin is reported by Dr. G. A. Johnston.—(*Brit. Med. Journ.*, May 3rd, 1890.)

Antifebrin.—Messrs. Bokenham and Jones (*Brit. Med. Journ.*, Feb. 8th, 1890) observed alarming effects, similar to those noted above from exalgin, in a lady, aged forty-three, after 7 grains of antifebrin. An analogous case is reported by Dr. Haley (*Lond. Med. Rec.*, Dec. 20th, 1889; from the *Weekly Med. Review*). But that recovery is possible even after excessive doses is illustrated by two recent cases in Germany. A student swallowed 29 grammes, and a woman 30 grammes. Both were intensely cyanosed, but recovered.—(*Pharm. Journ.*, June 21st, 1890; from *Apoth. Zeitung.*)

An interesting summary of the experience of Russian physicians on the clinical uses of antifebrin will be found in *Lond. Med. Rec.*, July 20th, 1889.

Antipyrin.—Dr. Schwabe reports a case where violent toxic symptoms were observed in a young woman who had been ordered antipyrin in 1 gramme doses for severe neuralgic pains (*Apoth. Zeitung*, June 14th, p. 322). Three minutes subsequently to taking a dose at noon, after a meal, she complained of peculiar oppressive

pain in the back of the head. This was followed quickly by singing in the ears, giddiness, and a feeling of anxiety; then by tumultuous heart-beat, difficulty of breathing, cold sweat, a strong feeling of heat on the right side of the body and of cold and numbness on the left. In twenty minutes the sight was affected, followed by complete amaurosis, lasting half an hour, when it gradually disappeared. The heart disturbance was excessive, the beats numbering two hundred to the minute during the first hour; the speech also was affected. The symptoms perceptibly decreased during the afternoon and evening, but the patient felt very ill during the next two days, though she eventually recovered without any permanent injury.—(*Pharm. Journ.*, June 28th.)

Phenacetin.—Dr. Collischonn is of opinion that the reason why phenacetin has not won its way as an anti-rheumatic is because it has been given in too small doses. With larger doses Dr. Collischonn has had most satisfactory results in the treatment of rheumatism, and he has given up the use of salicylic acid on account of its frequent unpleasant after-effects. The author cured himself of a rebellious attack of rheumatism in two days by two doses of 2 grammes of phenacetin, while he had previously taken 120 grammes (3½ oz.) of salol in the course of three weeks without any effect. He recommends at least a trial of phenacetin in all cases of rheumatism, best administered in four doses of 1 gramme (15 grains), or two doses of 2 grains.—(*Therap. Monatsch.*, März, 1890.)

Several observers—viz., Drs. Katz, Sleimann, and Irwin, strongly recommend phenacetin in whooping cough. It may be prescribed dissolved in glycerin, in doses from ½ to 10 grains.—(*Med. Chronicle*, April, 1890; from *Apoth. Zeitung.*)

CANCER OF THE BLADDER.

As a wash for cancerous bladders, M. Ludwig Frey recommends iodoform, 25 grammes; glycerin, 20 grammes; water, 5 grammes; gum tragacanth 12 cgr. Mix. One teaspoonful of this mixture to be added to a pint of tepid water. Three injections to be given daily.

WINE FOR PULMONARY TUBERCULOSIS.

M. V. Giebert (*L'Union Médicale*):—E. creasote, 2 to 3 grammes; arsenite of sodium, 0 gr. 04 centigr.; Malaga wine, 500 grammes. Mix. Two small glasses of the wine daily during meals.

PART IV.

MEDICAL MISCELLANY

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Samuel Gordon, M.D., F.R.C.P.I.
General Secretary—W. Thomson, M.D.

SECTION OF SURGERY.

President—H. G. Croly, President of the Royal College of Surgeons in Ireland.
Sectional Secretary—Mr. W. Thornley Stoker.

Friday, January 23, 1891.

The President in the Chair.

The Treatment of Surgical Tuberculosis by Koch's Method.

Mr. F. A. Nixon read a paper. He wished to direct attention to the temperature charts, when not only did the temperature fall after the injection, but having become normal it fell again slightly before reaction commenced; also to the condition of the urine, the sp. gr. of which increased from 1016 to 1023, and contained an excess of urates, with ropy mucus. He further observed that the effect of the injection upon the enlarged glands in the neck in a case of lupus was negative. They did not either increase or decrease in size.

He thought that the cases in which there was exit for the discharge, such as lupus of the nose, pharynx, diseased bone, &c., were the most favourable for the method of treatment, but that it was dangerous when the discharges were pent up in an unyielding bony case, such as the cavity of the skull, or even the thorax. In tubercular disease of the abdominal cavity he would adopt the treatment by incision and flushing in preference to Koch's method.

Professor Bennett detailed his short experience of the remedy, and expressed his regret that the discussion had been raised so soon. He had injected fifteen patients since December 18th, 1890. Of these eleven

reacted to the remedy without accident, and with marked improvement in many. One—a case of subcutaneous lupus—had been cured, and a case of resection of the elbow, in which recurrence of disease occurred, had been rescued from amputation. In the four cases which did not react the disease were in three proved to be non-tubercular; in one the proof was by *post mortem* examination. In three cases he had refused the treatment as dangerous, and two refused his offer through fear.

Mr. Myles gave a short account of six cases treated by him in the Richmond Hospital. Two were cases of lupus, two of bone disease, one of glandular swelling, and one of congenital syphilis. One of the joint cases was operated on first and treated with the lymph afterwards, the result being, on the whole, encouraging. The other case was first injected, and then the knee-joint excised. Mr. Myles described in detail the appearance of the diseased foci in the knee as modified by the injection, showing that the vascularity of the parts was greatly increased, the amount of necrotic tissue much greater than usual, and that there was evidence of fresh activity in the tuberculous processes; pointing out that the appearances seen in the knee corresponded closely with those described by Prof. Virchow as existing in the lungs and viscera of patients dying after injections. The speaker then discussed the propriety of operating before or after injection, pointing out that after the injection the diseased foci were the centres of acute inflammatory processes, and that operation at such a time was not only uniformly unfavourable, but was also likely to lead to the development of general tuberculosis; while, on the other hand, if surgery first provided a free outlet, then the necrotic tissues could be readily cast off and the dangers of subsequent absorption avoided. He also pointed out that the anæmia and emaciation consequent upon repeated attacks of fever could not be considered likely to make the results in capital operations more favourable. Mr. Myles, while favouring the use of the lymph in lupus, rather deprecated the importance attached to it as a diagnostic agent, mentioning the fact that in one of his cases—one of undoubted congenital syphilis—the characteristic reaction was present. The speaker, in conclusion, urged that the time was not yet ripe for giving really reliable opinions as to the value of the remedy and the cases in which it was likely to be of use.

Mr. Kendal Franks said that in the limited time at his disposal he would deal with only one portion of the subject under discussion—namely, the diagnostic power of Koch's lymph. Two objections to this had been raised:—1, It was stated that healthy individuals sometimes react perfectly; and, 2, that some undoubted cases of tuberculosis did not react. These cases, at any rate, were exceptional. As to the first objection, he would say that it was sometimes impossible to detect by examination a small tubercular focus hidden away in some corner of the body, but which would be brought to light by the lymph, and thus a seemingly healthy

person would react. To the second objection it was not possible at present to reply, but it would probably be shown hereafter that certain conditions of the constitution, such as infection with syphilis, might have a very modifying effect on the action of the lymph. He mentioned four illustrative cases. The first was a boy aged thirteen and a half years, with pain in the knee and hip, and limping, who, however, presented no physical sign of hip disease, and was suspected of malingering. The injections were followed, however, by typical reaction, proving the case to be one of incipient hip disease. The boy had ceased to react to a decigramme, all pain had gone, and he could now walk perfectly well. The second case was that of a young lady who had had a persistent cough for two years, with profuse expectoration for the past nine months. She was losing flesh and colour and was beginning to exhibit a markedly phthisical aspect. There were no physical signs in the chest and no bacilli in the sputum, but there was some infiltration of the interarytænoid mucous membrane. No remedies had given her any relief, and she was becoming worse. On the 23rd of December, 0·001 gr. of the fluid was injected, without reaction following; 0·003 gr. produced a slight reaction, with soreness of the throat. She reacted well to the subsequent injection, and now scarcely reacts when 0·1 gr. is used. The throat was sore after each of the earlier injections, but though it showed some hyperæmia in the larnyx there was no ulceration. After the fifth injection the cough disappeared, and has not since returned; the expectoration has almost quite ceased, and she has improved considerably in weight and appearance. Case 3 was a young man with an ulcer and eczema on his leg, injected as a control experiment. He, however, reacted when 0·004 gr. was reached, and after a subsequent injection of 0·01 gr. It was then discovered that he had a chain of small hard glands in his neck, which he explained he had himself noticed for a long time previously. The fourth case was that of a man under the care of Dr. Wallace Beatty, in whom a diagnosis of tuberculosis of the left apex, with thickened pleura at the left base, was made. Mr. Franks was asked to employ Koch's treatment; but the man showed no reaction, even when 0·01 gr. was injected. No bacilli were found in the sputum, and now Dr. Beatty and Mr. Franks are agreed that the case is one of cirrhosis of the lung, and is not tubercular. The cases, Mr. Franks thought, were very suggestive as to the future value of the lymph in diagnosis. In conclusion, he stated he had employed the method in over 20 cases, and had administered 173 injections up to date. He had seen no untoward result follow its use, and the results so far were very encouraging, and sometimes very remarkable.

Sir William Stokes commenced by giving some details of fifteen cases he had treated by Koch's method during the past six weeks; of these seven were of pulmonary phthisis, and the remaining eight of other

forms of tubercular disease. Among the latter there were three cases of glandular enlargements, two cases of tubercular disease of the knee-joint, one of the ankle-joint, two cases of lupus, and one of phthisis laryngea. In the majority of the phthisical cases the effects of the treatment were considered satisfactory and encouraging. There was complete cessation of night sweats, alteration in the expectoration (which as a rule lost its nummular character and became watery and frothy), and a very great increase in the number of tubercle bacilli during and immediately subsequent to the periods of reaction. In three of the cases a material increase in the patients' weight occurred, and in two of the cases a sensible decrease in the cough. In one of the three cases of glandular enlargements the result of the treatment was very striking. The patient, a youth aged 19, had been suffering for more than two years. On the left side of his neck was a large glandular tumour, about the size of an orange, very firm, hard and fixed, and on the right side numerous smaller enlargements. The patient had eleven injections, none of which ever exceeded 10 milligrammes. The result of the treatment is that the enlargement on the left side has subsided to so great an extent as to be hardly noticeable, and on the right side it requires a careful search before the existence of anything abnormal can be determined. In two of the three joint cases a distinct improvement was noted, but the most important result obtained was in one of the cases of lupus. After six injections the improvement was in every way a signal one. After alluding to the importance of meetings where the merits or demerits of the treatment could be discussed by those making a careful trial of the remedy, the author drew attention to the recently published hostile criticism of it by Prof. Virchow. He (Sir William Stokes) believed that Prof. Virchow's unfavourable estimate was due to what he and others in Berlin had observed—viz., the indiscriminate way in which the remedy was employed. No selection of suitable cases was made, and under these circumstances it was surprising that the number of *post-mortem* examinations of cases that died while undergoing the treatment was not far in excess of the number mentioned in Prof. Virchow's paper. The author (Sir William Stokes) stated that in some respects his experience of the treatment was disappointing, as he had not seen a single case in which the result was perfectly satisfactory; but he observed that it should be remembered that the treatment was in its infancy, and probably will be much improved upon and perfected, and that the marvellous and almost immediate effects of the drug on tuberculous tissue are such as to make us reasonably anticipate from it in the future the greatest and most beneficial results.

Dr. H. C. Tweedy read a communication. He contended that there are certain limitations to the use of this method; that it is admissible in cases where the structures killed by the injection of the lymph can be easily eliminated; but that under other circumstances it should be used

with the greatest caution. Independently of the obvious danger of an overdose, there are other risks to be guarded against in the use of this remedy—one is its cumulative action, and another, depending apparently on individual idiosyncracy, is this, that the age of the patient and the extent of tubercular disease fail to indicate what the amount of the dose should be, some cases reacting much more violently than others, even after minute doses. There was another grave danger to be apprehended in the metastasis of the bacilli, which might thus form fresh foci of disease. The following points were suggested for discussion:—1. Is Koch's lymph likely to afford permanent immunity from future attacks of tuberculosis? 2. Is the power of tolerating large doses of the lymph, after repeated injections, due to the force of habit, or is it in the inverse ratio of the tuberculous tissue still undestroyed? 3. What are the causes of the variations in temperature, cutaneous eruptions, epigastric pain, and the other anomalies occurring so differently in different cases? Dr. Tweedy also drew attention to the diagnostic value of the remedy, and mentioned a case which he had seen in the Jewish Hospital in Berlin, in which lupus and cancer co-existed on the same subject, the result of injection being that the lupus patches were strongly acted upon, while the cancer remained unaffected; and again, the fact that the old lupus cicatrices gave no signs of reaction, in several cases which he had observed, afforded evidence that the disease had been eliminated; and lastly, on the assumption that, in cases of lupus, the bacilli are driven outwards by the congestion brought on by the injection of the lymph, it might be advisable to supplement Koch's method by the external application of antiseptics with a view to destroying the bacilli.

Mr. Tobin read a paper. Reference was made to some joint cases under treatment by rest—such rest as is afforded by plaster-of-Paris bandages to joints of the upper extremity, and by Thomas splints to those of the lower, by exercise in the open, by cod-liver oil, and by Koch's lymph. These cases had reacted in the usual way to the injections, but it yet remained to be seen whether the cure would be made shorter or more permanent by this additional treatment. As yet there was nothing in their condition to warrant any forecast. A case of lupus 46 days under treatment, shown previous to the meeting, was referred to. The patient, a boy twelve years of age, had ceased to react to 10 millimetres of one per cent. solution. He looked quite as badly as he did previous to the treatment; but, judging from other cases, it was expected a cure would be reached at a later date. Putting together all that is known of the plan of treatment under consideration, it was better to confess that we are still in darkness, to advance carefully, and to avoid speculating till more facts, both clinical and pathological, had been observed and recorded.

Dr. Meldon said:—Although it is now just twelve months since it was announced that Dr. Koch had discovered a cure for every form of tuberculosis, it is really only a couple of months since the plan was first put on its trial and an opportunity given to the profession of testing the value of the discovery. It is the duty of every practitioner who has tested it to give the result without loss of time, so that some data may be obtained on which a verdict can be founded. Professor Virchow's remarks on the effect of Koch's remedy on the internal organs of tubercular patients renders this more imperative. For this reason I tender my evidence, which shall be brief. I have now inoculated the lymph ninety times on seventeen patients. Ten of these were cases of pulmonary phthisis, all having bacilli in the sputum. In every case reaction was well marked, but in only two can I see any improvement. One has increased 2 lbs. and the other 3 lbs. in weight. The bacilli have not decreased in a single case. To one of these cases alone will I direct attention. Since the early portion of December I have injected this patient ten times with from one to twelve milligrammes. His condition is now, as far as I can judge, just as it was before the treatment commenced, and Professor Scott recently examined the sputum and certified that it contained abundant tubercular bacilli. One case was of tubercular disease of the knee and one of the wrist; in both there was reaction, but as yet no improvement. One of lupus has been improved, and it is now healing. Three of glandular swelling were followed by reaction and redness of the swollen glands. The last case was that of a child with symptoms which seemed to indicate the commencement of hip-joint disease, whom I injected on Wednesday last in Jervis-street Hospital with one milligramme of the lymph. This was not followed by the slightest rise of temperature, although a phthisical adult whom I injected on the same day with the same quantity had a very severe reaction, with a temperature of 106°. Such is my experience. The only case in which I can definitely state I have seen any substantial improvement has been the case of lupus.

Mr. Thornley Stoker read a paper on his observation of Koch's treatment. He gave brief and general details of 6 cases of lupus, 3 of joint disease, 2 of glandular disease, and 1 of bone necrosis, in which he had employed it since December 6th. The general results were most satisfactory. All the lupus cases were much improved, and several appeared almost recovered. The joint diseases were improving, and one of the cases of this class and that of necrosis seemed recovered. The glandular enlargements had made the most remarkable improvement, and one of them seemed well. He had had favourable experience of the value of the agent as a diagnostic agent in several cases, including one in which doubt existed as to whether a disease of the testis was tubercular or syphilitic. One of the cases of lupus which was improved to a marked

degree was so advanced as to have been beyond the reach of operative measures. Only one case, that of acute hip disease, had failed so far to derive continued benefit. Attention was called to the remarkable variety in the reactions, in one instance a secondary general reaction taking place nine days after that following immediately on the use of the lymph. Two remarkable eye reactions were recorded in cases where the treatment was used for facial lupus—one a breaking down of the cicatrices of old corneal ulcers; the other the clearing of corneal opacity, the result of old tubercular corneitis. The result of Mr. Thornley Stoker's observation was that very large doses of lymph need not be used; that it was a most dangerous as well as a most useful agent; that its diagnostic value was immense; that in surgical cases it would generally require to be supplemented by operation; that our knowledge concerning it is in such an embryonic state that observation and careful record are emphatically called for; and that at present it would be most unwise to dogmatise about it in any way.

Saturday, January 24, 1891.

Mr. Lentaigne said his experience so far had led him to hope that the treatment would be of great value in early tuberculosis, and also when the disease was limited in extent; where the disease was extensive an outlet would have to be found for the necrotic tissues. He found that when the tuberculosis was inside the skull the treatment, as at present used, would be of no use, or more probably would be actually injurious. He also thought that we could not reasonably hope to do good when the tubercular tissue, already necrotic, was invaded by septic organisms, unless we could at the same time remove or destroy these organisms, as the tissues, made necrotic by the lymph, would also become invaded by these organisms, and would greatly increase the septic poisoning. He thought that this might explain the aggravation of symptoms in some of the cases of lung disease which had got worse after the injections. On this account he combined perpetual creasote inhalations with the injection treatment in the few cases of pulmonary tuberculosis under his care.

Mr. M'Ardle did not think the meeting premature; he believed that if it had been held earlier much pain and suffering would have been prevented. If the cases exhibited represented the bright side of the picture, he could not take it as indicating a brilliant future for this treatment. He thought it time to in some way stay the indiscriminate use of this material, if the writers of papers on this subject could show only such results as were represented by the following expressions:—Mr. Nixon saw no cure; Mr. Bennett, of 11 cases, saw only one of subcutaneous lupus cured; Mr. Myles saw no cure, but detailed a case in which great general debility and anæmia followed operation in a case which had been

injected; Mr. Franks cured a cough by injection, but did not know what disease caused it; Sir W. Stokes saw no case he could regard as a perfectly satisfactory result; Dr. Tweedy showed its diagnostic value, but mentioned no cure: Mr. Tobin could not say that his case of lupus had improved after six weeks' treatment; Dr. Meldon saw one case of lupus improved; Dr. Barton had a case of tarsal tuberculosis, apparently cured; Mr. Stoker detailed some cases which were improved, some supposed to be cured; Mr. Lentaigne says one case out of 23 seems to have been completely cured. Now this did not seem to him to be a result comparable with that obtained by ordinary surgical treatment in such cases. As a diagnostic agent, he thought the lymph useful. The first patient complained of stiffness and pain in the region of the hip, and he had some fulness round the great trochanter. Believing the case to be one of tuberculosis of the gluteal bursa, he injected 3 milligrammes of lymph. This was followed by relief of pain and increased mobility of thigh. After a second injection of 3 milligrammes a very marked local reaction occurred: a large fluctuating, gurgling, swelling appeared over the trochanter; and on cutting down on this later he was able to remove the gluteal bursa, which he found the seat of extensive tubercular disease. The second case, simulating hip-joint disease, turned out to be one of tubercular disease, surrounding the sciatic nerve. In these cases the lymph was of material service in clearing up the diagnosis as to the condition of the lower end of the femur, described by Mr. Myles as resulting from the action of the lymph. He had seen the same softening occur in very many cases in which the lymph was not used. Mr. Lentaigne claimed that the lymph hastened the recovery of a case of erasion of the knee. Two of his recent cases, where he trephined the great trochanter, and scooped out the entire contents of the shaft of the femur, through the lower end, while resecting the knee, ran the ordinary course, which is usually unmarked by any febrile disturbance. He must say that he had not yet seen in the practice of anyone a cure, while he has seen many instances of distress arising from the injection.

Mr. William Thomson said it appeared to him that the opinions conveyed in the papers might be classed as doubtful, hopeful, and sanguine. He thought the profession had been rather swept away by outside enthusiasm, and had allowed themselves to have greater expectations of good results than were yet justified. But the sceptics who asked for cures in a few weeks after treatment did not apply the same rule to other forms of treatment; and he thought it unreasonable that such a demand should be made in the case of Koch's lymph. Koch himself had certainly been more modest in his claims than others had been for him. He (Mr. Thomson) had no doubt that the lymph was of great value as a diagnostic, but they were not in a position yet to speak of cures in the vast majority of cases. The lymph had admittedly the

power of searching out tuberculosis, and it remained to be seen how far that power would end in a curative result. The objection of Mr. M'Ardle that the remedy was dangerous might as well be urged against the use of morphin or any other poisonous drug. He regarded the position of the surgeons in Dublin as one of careful watchfulness with hopefulness. He believed they were on the right track in this matter, and, however deficient the treatment might be at present, he thought it probable that important developments would follow.

Mr. F. Alcock Nixon said the authors of the various papers seem to bear out the view which he expressed, that those cases did best under Koch's treatment in which there was exit for the discharge. Glands which were covered by unbroken skin did not, in cases which he observed, stand any chance whatever. Bone diseases in which there were sinuses were classified among the few cases of cure. Very few speakers referred to the symptom of cough, which he observed to be very constant. It was absent in the intervals of the injection, and careful physical examination failed to reveal any evidence of pulmonary tuberculosis to account for it. He regretted that he failed here, as he did at the International Medical Congress at Berlin, to elicit any expression of opinion as to the method in which tuberculosis in the abdominal cavity is cured by abdominal section. He had observed a fall of temperature after the injection, and again just before the commencement of reaction, the latter being much less marked than the former.

Mr. Kendal Franks said that he did not agree with Mr. Myles that a *primâ facie* case had been made out for operating on a tuberculous case previous to the employment of Koch's lymph, instead of subsequent to its use. Mr. Myles had based his argument mainly on the supposed lowering effects which the febrile disturbances caused by Koch's lymph would produce. His experience was entirely opposed to this. He found the large majority of his cases—he might almost say all—improved considerably under the treatment; they gained strength instead of losing it, and increased in weight, so that at the end of a four to six weeks' treatment by the lymph, they were much better able to bear an operation than before it. On the other hand, operation was rendered much easier and simpler by the previous employment of the lymph. The diseased parts were necrosed and separated, so that, as it were, a well-defined "line of demarcation" was found between the healthy and diseased structures; the latter were much more easily removed and much less of the healthy structures need be sacrificed. In disease of the knee-joint, for instance, this would prove of the greatest importance, and treatment by erasion would be much more frequently available than hitherto. Mr. Franks thought a great deal too much stress had been laid upon the dangers attending the treatment, and the consequence was that people were afraid of trying it. The same cry had been raised against the use

of antiseptics when they were first introduced, and cases of deaths attributed to the use of carbolic acid, or corrosive sublimate, or iodoform, were cited; but instead of giving up the use of these substances, such cases had only taught them caution. It was the same now with the Koch lymph; but there was this difference, that whereas the cases that died of carbolic acid poisoning might otherwise have recovered, all the cases that had succumbed after the use of Koch's fluid were foredoomed already. The great lesson he thought that they should learn from Prof. Virchow's paper was that certain cases, especially those of advanced tuberculosis, were injured and not improved by the injections; that it was necessary, in the future, to select our cases more carefully. From his own experience of over 20 cases, and after the use of over 170 injections, he had come to the conclusion that, with proper precautions—chief amongst which was careful selection—the employment of the method was unattended by risk. Again, he urged that at the beginning minimal doses (1–2 milligrammes) should always be adopted. Even in lupus cases, it was not wise to begin with centigramme doses, for he believed that it was not an over-estimate when it was stated that about 25 per cent. of cases of lupus of the face had lupus nodules in the pharynx and larynx, under which circumstances a large injection might produce dangerous swelling. He did not agree with the majority of those who limited the subsequent doses to a centigramme or thereabout. When he found a patient bore the injections well, he believed the best results were obtained by a gradual but rapid increase until the maximal dose of one decigramme was reached. When the patient ceased to react to this dose, the patient might be said to be *provisionally* cured. The ultimate results could only be ascertained by the lapse of time.

SECTION OF MEDICINE.

President—J. Magee Finny, M.D.; President of the Royal College of Physicians of Ireland.

Sectional Secretary—A. N. Montgomery, M.R.C.P.

Friday, January 30, 1891.

The President of the Academy (Dr. Gordon) in the Chair.

Phthisis in Various Stages treated by Koch's Method.

Dr. M. A. Boyd read a paper on the above subject. [It will be found at page 193.]

A Series of Six Cases of Pulmonary Disease treated by Koch's Method.

Dr. J. W. Moore read a paper on the above subject. [It will be found at page 205.]

Koch's treatment of Tuberculosis.

Dr. C. J. Nixon read a paper on the above subject. [It will be found at page 185.]

Mr. Lentaigne said that, in spite of the vigorous attack on the treatment which he had just heard, he would still continue to use the remedy, as although he had now 27 patients treated or undergoing treatment, his experience had been highly encouraging. He could assert with confidence that there was no question that, at any rate so far, not one of the cases he had treated was in any way the worse for the injections, while the great majority were undoubtedly improved, and in some the improvement was very great. His cases had been mostly of surgical tuberculosis, but if the attacks which had been made were valid they ought to apply to surgical tuberculosis to some extent at any rate. Now, amongst the 27 cases treated, there was not the slightest reason for suspecting that any new or fresh tuberculosis had been caused, or had resulted from the injections. On the contrary, the evidence he had so far tended altogether the other way. He thought the lesson that should be derived from Professor Virchow's paper, which had naturally been so much quoted that evening, was, that unsuitable cases should not be submitted to the treatment while it was still under investigation.

He also thought that the remedy should be used with much greater care; the first injections should be of the very smallest doses, and when reactions were obtained the intervals between injections should always be long enough to allow of a complete resolution of the inflammation set up by the injections. One of his cases of lupus had shown a most violent and characteristic constitutional reaction, with a temperature of 105·5°, after a dose of only two milligrammes; and the very first case he had injected, another lupus patient, had suffered severely after a first dose of only 4 milligrammes, and the reaction had shown that she was suffering from extensive laryngeal tuberculosis—a fact which had been hitherto unsuspected. The inflammation from the first injection had not subsided for a long time. He could easily understand why patients suffering from cavities containing septic organisms might be made worse by the injections, as the material made necrotic by the injections would, if not expelled quickly, become a field for the growth of these organisms, and the patient would be suffering from a proportionally increased absorption of septic products. This accounted, in his mind, for the continued or increased hectic reported by some observers. He combined continuous inhalations of creasote with the injections in any cases of lung tuberculosis under his care, in the hope that he might thereby lessen in some way the septic conditions. He also thought that the old surgical treatment of tuberculosis should always be availed of, where possible, to hasten the expulsion of the increased tubercular tissue. He would conclude by

repeating that the results he had obtained so far were altogether favourable, and had made him most hopeful.

Dr. Joseph Redmond stated that cases injected with Koch's lymph under his care were showing signs of improvement which, he hoped, would continue. He thought that there was one grave objection, however, to Koch's lymph—that it does not destroy the bacilli. He would, therefore, suggest that hypodermic injections of chloro-cyanide of gold and perchloride of mercury should be administered on alternate days, as we are told that 1 part of the chloro-cyanide of gold in 3,000,000 is sufficient to destroy the tubercle bacillus. The quantity of the chloro-cyanide likely to produce this result might be ascertained by basing our calculations on the quantity of blood in the body, &c.

Dr. O'Carroll stated that he has eight cases of tubercle of lungs under Koch's treatment. Two of these, strangely enough, run counter to the generally-accepted view as to the diagnostic value of the remedy. The first is a man who shows large numbers of bacilli in his sputum, but who has never reacted to any appreciable extent; the second, a man who gives a history and shows signs from which one would diagnosticate only right inferior lobar pneumonia, in whom the sputum, frequently examined, shows no bacilli, and who yet gives well-marked reactions. Dr. O'Carroll laid stress upon three points in the further application of the treatment—first, let the cases be carefully selected; secondly, keep down fever; and thirdly, avoid drugs which check expectoration.

Dr. M'Weeney, having had occasion to examine a very large number of specimens of sputum obtained at various periods from each of the many patients under treatment by Koch's method for the last two months at the Mater Hospital, wished to lay the results of his work before the Academy. He desired, first of all, to make every allowance for the somewhat uncertain character of sputum examinations, and desired to draw attention to the value of the method now frequently adopted in Germany of rendering the sputum homogeneous. He had not adopted this procedure, but the number of his observations might fairly be regarded as carrying with it a certain amount of value. His results were as follows:—1. An increased, sometimes a greatly increased, number of bacilli in sputa, where before the injection only a few could be found. 2. The bacilli seemed frequently to possess a tendency to occur in groups and solid masses. These aggregations were only very seldom to be seen in cases that had not been treated by the lymph, but in these latter were of comparatively frequent occurrence. 3. The bacilli sometimes exhibited marked signs of degeneration. Every stage was seen, from a somewhat increased number of lacunæ in the bacillus to an appearance where each individual organism looked like a chain of cocci, and these became agglomerated into irregular heaps, containing the remains, in some instances, of several hundreds of bacilli. It also appeared to him

that the treatment was based on correct scientific principles, and that Koch's view of the *rationale* of its action needed, perhaps, a few words of explanation, in view of the extreme importance of having clear-cut ideas on the subject. A tubercular focus contained a central caseous mass where the bacilli had flourished, but in which coagulation-necrosis had been induced by their metabolic products, and in which, if they existed at all, they had lost their vitality; outside this lay an area in which there were bacilli in varying numbers. The vitality of this tissue was lowered but not destroyed; the bacilli gradually spread into the surrounding area by their ordinary process of multiplication, and by the time the surrounding tissue was infected that previously occupied by them was necrosed. Now the effect of the lymph was to bring about a rapid necrosis of the tissue in which the bacilli existed, by suddenly introducing a quantity of the metabolic products in question. The result was that the bacilli were enclosed in a tissue, suddenly rendered necrotic, and hence converted into an unsuitable nidus, and the applicability of the treatment depended altogether on the possibility of removal of the necrosed but living-bacillus-containing tissue from the organism. The difficulty of knowing beforehand whether this removal was possible in pulmonary cases rendered its application to such patients a matter for grave and earnest consideration.

Dr. Boyd, in replying, said that his paper was a simple narration of his own observations and experiences of the result of this method of treatment, and was in no sense a controversial one. The object was to group the cases together, so as to discover the stages of phthisis most likely to be benefited by it. The aggravation of the pneumonia in some of the groups he had called attention to a month since, and was glad to see this was pathologically proved by Virchow's researches. Mr. Lentaigne doubted that such a thing as tuberculosis could follow injections. The speaker's case, in which bacilli appeared in the sputum of a case of croupous pneumonia after several injections had been given, was remarkable. He did not assert the injections caused it, but their presence was peculiar.

Dr. J. W. Moore and Dr. C. J. Nixon having also replied,

The Section adjourned.

SECTION OF STATE MEDICINE.

President—A. W. Foot, M.D.
Sectional Secretary—E. MacDowel Cosgrave, M.D.

Friday, February 13, 1891.

The President in the Chair.

The Education of Midwives considered in connection with the Midwives Registration Bill.

In the unavoidable absence of Dr. Atthill, his paper on "The Education of Midwives, considered in connection with the Midwives Registration Bill," was read by Dr. Cosgrave, Hon. Sec. of the Section.

Dr. Foot thought it would be the duty of the Medical Council to lay down regulations for the education of midwives. The chief interest of the discussion would lie in the direction of the points of contact between the proposed educated midwives and the general practitioners.

Mr. R. Montgomery read a telegram from Dr. Jacob from London stating that the deputation to the Lord President of the Council had been satisfactory, and that the Government had pledged themselves not to support the Bill.

Dr. Quinlan said that as the Bill did not extend to Ireland, it appeared to him that the principal point was to protect the right of practising in England and Scotland, now belonging to the diplomated midwives and nursetenders who have been licensed by the two chartered Dublin hospitals, and also by the Royal College of Physicians of Ireland. At present these Irish diplomates were legally authorised to assume the title of midwife in any part of England and Scotland. If this Bill were passed the rights of these diplomates would be swept away in the two sister kingdoms. He thought that the institutions referred to ought to see to this either by petition or in some other way.

Dr. Falkiner said that the difficulties of defining the functions of the midwife and the practitioner under the new Act make necessary some other basis for legislation. Would not the difficulty be met by making it a law that no woman should terminate a pregnancy without the presence of a registered midwife and a medical practitioner? As a matter of fact, the benevolence of the wealthy Irish provide both for the poorest woman in the district slums in Dublin. Why should not the women of the upper poor class have the same professional attendance as it gives to the absolutely destitute?

Dr. J. W. Moore severely criticised the "Midwives Registration

Bill," more particularly in reference to the unsatisfactory provisions contained in it for the framing of rules respecting the examination of midwives, the appointment of examiners by County Councils, and the wholesale registration of existing midwives for a fee not exceeding two shillings and sixpence. The Royal College of Physicians of Ireland had taken active steps against the present Bill on public grounds, and had urged the necessity of referring the whole subject of the education and registration of midwives to a Select Committee of the House of Commons before legislation on so momentous a matter is undertaken. The speaker considered that this was the wise and proper course to pursue.

Mr. Horne also spoke.

Note on Illness caused apparently by Aniline Coloured Sweetmeats.

Sir Charles Cameron, after pointing out that numerous cases of illness had been attributed to aniline colours used in clothing and for colouring food, explained that the toxic action of the dyes was generally attributed to the arsenic used in the preparation. The author had investigated three distinct cases of illness in which the symptoms were attributed to the use of coloured confections. The children in three distinct families were taken ill with vomiting and purging after eating coloured comfits and sugar balls. Some of the cases were treated in Mercer's Hospital. Analysis revealed in the confections no mineral poison; but it was noted that the colouring matter was very large in quantity. It proved to be fuchsin. The author thought that these cases rendered it not improbable that fuschin might be toxic even when free from arsenic.

Dr. Foot said he thought the injurious effects of aniline dyes, especially fuschin, might be due to the affinity for this colouring matter on the part of the protoplasmic matter of cells, which imbibition and staining might reasonably be expected to interfere with their physiological or biological action, and therefore be detrimental to various bodily functions.

Dr. Quinlan said that the colouring of confectionery was a very interesting subject. One of his earliest recollections was the banquet given in Dublin to the soldiers coming from the Crimea. On that occasion the tables were decorated with confectioned edifices, which, perhaps, contained as much plaster-of-Paris as sugar; in compliment to this country, they were mostly coloured green, that colour being due to Scheeles' green. Through a window left open for ventilation the boys of the locality got in after the banquet, feasted on the confectionery, and as a result there was extensive arsenical poisoning. Fortunately none of these cases proved fatal, but they gave great anxiety. He thought that the use of aniline colours in confectionery was much to be deprecated. Aniline colours were very powerful, and very small quantities were required for colouring confectionery; still we have available vegetable

and animal colours which are absolutely safe. Cochineal gives a fine red, saffron a yellow, litmus a blue, and turmerie a brown. Furze blossoms give a nice yellow, which is often used for colouring eggs in boiling, and with these resources he thought that aniline colours ought to be let alone until, at all events, we knew more accurately the details of their toxic effects. Of course it was unnecessary to add that the use of metallic pigments by the confectioner was simply a crime which ought to be severely punished in all cases where it was detected.

Dr. Falkiner and Mr. Lentaigne also spoke.

Civil Service Insurance Scheme.

Dr. MacDowel Cosgrave read a paper on the above subject. [It will be found at page 212.]

Dr. Falkiner said that, although the C. S. Assurance Company dispense with a medical certificate for convenience, he would like to ask whether, as in the case of the insurance companies amongst the poor, they depend upon the certificate of death given by a conscientious doctor at the death of the patient.

For instance, a death certificate gives the duration of disease for three years, the patient is assured for two, and although the company have never made a medical examination, they refuse the poor people their policies on the death certificates. Again, if it is meant as a gigantic advertisement, it is a great mistake, as the best advertisement for an assurance company is their refusal to assure a life that has been stated to be not "first-class" by a medical man.

Mr. Lentaigne was greatly interested in Dr. Cosgrave's paper; he would add that he was also greatly alarmed. He himself was insured in the North British and Mercantile Company, and he felt very uneasy at what seemed to him a very reckless and dangerous policy. He thought the step would not be a good advertisement for the company; indeed, judging from the great uneasiness with which it inspired him, he was very glad to hear that, in Dr. Cosgrave's opinion, the company was so wealthy that the experiment could not seriously injure it.

Mr. Horne said that he did not think the British Mercantile Insurance Directors would have entered upon this scheme without due consideration of the mercantile aspect. They safeguarded themselves in two ways—first, by having to deal with a body of people who already had undergone a medical examination; and secondly, that if the premium exceeds £1,000, a medical examination may be demanded.

The President and Mr. Doyle also spoke, and Dr. Cosgrave replied.

The Section then adjourned.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F. R. Met. Soc.; Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, January 31, 1891.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Jan. 10.	Jan. 17.	Jan. 24.	Jan. 31.		Jan. 10.	Jan. 17.	Jan. 24.	Jan. 31.
Armagh -	25·8	36·1	5·2	10·3	Limerick -	27·0	35·1	28·3	24·3
Belfast -	33·5	26·2	30·2	31·8	Lisburn -	14·5	14·5	29·0	14·5
Cork -	30·5	28·6	38·3	27·3	Londonderry	19·6	42·8	12·5	33·9
Drogheda	8·5	25·4	16·9	33·8	Lurgan -	51·3	20·5	77·0	41·0
Dublin -	35·1	35·9	38·2	31·8	Newry -	17·6	31·6	21·1	24·6
Dundalk -	4·4	13·1	34·9	13·1	Sligo -	28·9	28·9	52·9	19·2
Galway -	20·2	33·6	30·3	30·3	Waterford -	20·8	32·4	60·2	39·4
Kilkenny	12·7	12·7	4·2	46·5	Wexford -	29·9	29·9	34·2	25·7

In the week ending Saturday, January 10, 1891, the mortality in twenty-eight large English towns, including London (in which the rate was 29·1), was equal to an average annual death-rate of 28·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 28·8 per 1,000. In Glasgow the rate was 39·1, and in Edinburgh it was 20·0.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 31·1 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·4 per 1,000, the rates varying from 0·0 in seven of the districts to 5·2 in Armagh—the 5 deaths from all causes registered in that district comprising 1 from whooping-cough. Among the 151 deaths from all causes registered in Belfast are 1 from scarlatina, 4 from whooping-cough, 3 from enteric fever, and 7 from

diarrhœa. The 47 deaths in Cork comprise 2 from scarlatina, 1 from typhus, and 2 from enteric fever.

In the Dublin Registration District the registered births amounted to 165—75 boys and 90 girls; and the registered deaths to 244—105 males and 139 females.

The deaths represent an annual rate of mortality of 36·0 in every 1,000 of the estimated population, being 3·8 above the mean rate for the first week of the last ten years. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 35·1 per 1,000.

Seventeen deaths from zymotic diseases were registered, being 1 over the number for the preceding week, but 8 under the average for the first week of the last ten years. They comprise 1 from measles, 6 from whooping-cough, 2 from diphtheria, 4 from enteric fever, and 2 from dysentery.

Ten cases of enteric fever were admitted to hospital, being 5 in excess of the admissions for the preceding week, but 1 under the number for the week ended December 27, 1890. Thirteen enteric fever patients were discharged, 1 died, and 66 remained under treatment on Saturday, being 4 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 2 cases of scarlatina, but no cases of typhus were received. During the preceding week 5 cases of typhus were admitted.

Deaths from diseases of the respiratory system, which had risen from 65 for the week ended December 27 to 87 for the following week, rose this week to 89, or 32 over the average for the first week of the last ten years. The 89 deaths comprise 64 from bronchitis, 22 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, January 17, the mortality in twenty-eight large English towns, including London (in which the rate was 29·2), was equal to an average annual death-rate of 27·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 27·8 per 1,000. In Glasgow the rate was 35·6 and in Edinburgh it was 20·6.

The average annual death-rate in the sixteen principal town districts of Ireland was 31·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·8 per 1,000, the rates varying from 0·0 in eight of the districts to 10·3 in Armagh—the 7 deaths from all causes registered in that district comprising 2 from diarrhœa. Among the 118 deaths from all causes registered in Belfast are 1 from scarlatina, 3 from whooping-cough, 1 from diphtheria, 2 from simple continued fever, 3 from enteric fever, and 4 from diarrhœa. The 44 deaths in Cork com-

prise 2 from whooping-cough, and the 14 deaths in Waterford comprise 2 from the same disease.

In the Dublin Registration District the registered births amounted to 189—92 boys and 97 girls; and the registered deaths to 251—101 males and 150 females.

The deaths, which are 25 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 37·1 in every 1,000 of the estimated population. Omitting the deaths (numbering 8) of persons admitted into public institutions from localities outside the district, the rate was 35·9 per 1,000. During the first two weeks of the current year the death-rate averaged 36·5, and was 3·6 over the mean rate in the corresponding period of the ten years 1881-1890.

Only 14 deaths from zymotic diseases were registered, being 3 under the number for the preceding week and 14 below the average for the second week of the last ten years. They comprise 2 from whooping-cough, 2 from diphtheria, 4 from enteric fever, and 1 from diarrhœa.

The number of cases of enteric fever admitted to hospital is 9, being a decline of 1 as compared with the admissions for the preceding week. Eighteen enteric fever patients were discharged, 2 died, and 55 remained under treatment on Saturday, being 11 under the number in hospital on Saturday, January 10.

The hospital admissions for the week include, also, 1 case of typhus and 4 cases of measles; 9 cases of each of these diseases remained under treatment in hospital on Saturday.

The deaths from diseases of the respiratory system amount to 102, being 42 in excess of the average for the corresponding week of the last ten years, and 13 over the number for the week ended Saturday, January 10. They comprise 64 from bronchitis, 30 from pneumonia or inflammation of the lungs, and 3 from croup.

In the week ending Saturday, January 24, the mortality in twenty-eight large English towns, including London (in which the rate was 25·7), was equal to an average annual death-rate of 25·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24·9 per 1,000. In Glasgow the rate was 31·0, but in Edinburgh it was only 19·6.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 34·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·7 per 1,000, the rates varying from 0·0 in eight of the districts to 9·7 in Lisburn—the 6 deaths from all causes registered in that district comprising 1 from enteric fever and 1 from

diarrhœa. Among the 136 deaths from all causes registered in Belfast are 1 from scarlatina, 4 from whooping-cough, 2 from diphtheria, 4 from enteric fever, and 1 from diarrhœa; and the 59 deaths in Cork comprise 1 from whooping-cough and 1 from diphtheria.

In the Dublin Registration District the registered births amounted to 205—109 boys and 96 girls; and the registered deaths to 260—137 males and 123 females.

The deaths, which are 34 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 38·4 in every 1,000 of the estimated population. Omitting the death of one person admitted into hospital from without the district, the rate was 38·2 per 1,000. During the first three weeks of the current year the death-rate averaged 37·2, and was 4·2 over the mean rate in the corresponding period of the ten years 1881–1890.

Only 13 deaths from zymotic diseases were registered, being 1 under the low number for the preceding week and 16 below the average for the third week of the last ten years. They comprise 1 from whooping-cough, 1 from ill-defined fever, 4 from enteric fever, 2 from diarrhœa, and 3 from erysipelas.

Eleven cases of enteric fever were admitted to hospital, being 2 in excess of the number of admissions for the preceding week. Twelve enteric fever patients were discharged, 1 died, and 53 remained under treatment on Saturday, being 2 under the number in hospital on Saturday, January 17.

Two cases of typhus were admitted to hospital against 1 case in the preceding week; 9 typhus cases remained under treatment in hospital on Saturday.

The hospital admissions include, also, 5 cases of measles and 3 of scarlatina. Ten cases of the former and 6 of the latter disease remained under treatment in hospital at the close of the week.

Deaths from diseases of the respiratory system, which had risen from 89 in the week ended January 10 to 102 in the following week, fell to 83, but this number is 20 in excess of the average for the corresponding week of the last ten years. The 83 deaths comprise 62 from bronchitis, 15 from pneumonia or inflammation of the lungs, and 3 from croup.

In the week ending Saturday, January 31, the mortality in twenty-eight large English towns, including London (in which the rate was 22·1), was equal to an average annual death-rate of 22·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 26·4 per 1,000. In Glasgow the rate was 35·3 and in Edinburgh it was 24·5.

The average annual death-rate in the sixteen principal town districts of Ireland was 30·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·4 per 1,000, the rates varying from 0·0 in eleven of the districts to 4·8 in Sligo—the 4 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 143 deaths from all causes registered in Belfast are 6 from whooping-cough, 2 from diphtheria, 3 from enteric fever, and 2 from diarrhœa. The 42 deaths in Cork comprise 1 from diphtheria and 1 from enteric fever, and the 17 deaths in Waterford comprise 1 from typhus and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 217—105 boys and 112 girls; and the registered deaths to 221—107 males and 114 females.

The deaths, which are 12 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 32·6 in every 1,000 of the estimated population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 31·8 per 1,000. During the first four weeks of the current year the death-rate averaged 36·0, and was 2·6 over the mean rate in the corresponding period of the ten years 1881–1890.

Fourteen deaths from zymotic diseases were registered, being 1 over the low number for the preceding week, but 15 under the average for the fourth week of the last ten years. They comprise 1 from measles, 1 from influenza, 1 from diphtheria, and 4 from enteric fever.

The number of cases of enteric fever admitted to hospital is 10, being 1 under the number for the preceding week. Eleven enteric fever patients were discharged, and 52 remained under treatment on Saturday, being 1 under the number in hospital at the close of the preceding week.

Two cases of typhus were admitted to hospital, being equal to the admissions for the preceding week. Only 5 cases of this disease were in hospital on Saturday, 6 patients having been discharged during the week.

No cases of either measles or scarlatina were admitted to hospital. During the preceding week 5 cases of the former and 3 of the latter disease had been received.

Deaths from diseases of the respiratory system, which had fallen from 102 in the week ended January 17 to 83 in the following week, further declined this week to 55, or 13 under the average for the corresponding week of the last ten years. The 55 deaths comprise 40 from bronchitis and 13 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of January, 1891.

Mean Height of Barometer, - - -	30·085 inches.
Maximal Height of Barometer (on 14th, at 9 p.m.),	30·875 „
Minimal Height of Barometer (on 23rd, at 9 a.m.), -	29·337 „
Mean Dry-bulb Temperature, - - -	39·5°.
Mean Wet-bulb Temperature, - - -	37·7°.
Mean Dew-point Temperature, - - -	34·9°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·207 inch.
Mean Humidity, - - - - -	84·0 per cent.
Highest Temperature in Shade (on 26th and 28th) -	53·7°.
Lowest Temperature in Shade (on 7th), - -	23·9°.
Lowest Temperature on Grass (Radiation) (on 7th),	19·8°.
Mean Amount of Cloud, - - - -	55·8 per cent.
Rainfall (on 14 days), - - - -	·672 inch.
Greatest Daily Rainfall (on 20th), - - -	·181 inch.
General Directions of Wind, - - -	S.W., W.

Remarks.

The period of cold, which was ushered in by the phenomenal snow-storm of November 27, 1890, lasted, with slight and temporary intermissions, until the 23rd of January, when the southwesterly type of weather became permanently established over Western Europe, strong S. to W. winds, high but variable temperature, and frequent showers prevailing day after day to the end of the month. To this decided change is due the fact that the mean temperature was only 1·3° below the average, notwithstanding the cold of the first three weeks of the New Year.

In Dublin the arithmetical mean temperature (40·1°) was decidedly below the average (41·4°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 39·5°. In the twenty-five years ending with 1889, January was coldest in 1881 (M. T. = 32·2°), and warmest in 1875 (M. T. = 46·6°). In 1867 the M. T. was 35·7°, and in 1865 it was 37·8°. In 1871 and in 1886 the M. T. was 37·9°; in the year 1879 (the "cold year"), it was 35·3°. In 1888 the M. T. was 42·1°; in 1889 it was 42·4°; and in 1890 it was 44·5°. As a general rule, January in Dublin is not colder, but a shade warmer, than December. This is owing to the full development in January of a winter area of low pressure over the Atlantic, to the northwestward of the British Isles, and to a resulting prevalence of S.W. winds in their vicinity. January, 1891, proved no exception to this rule, the M. T. being 0·9° above that of December, 1890 (39·2°).

The mean height of the barometer was 30·085 inches, or 0·211 inch above the average value for January—namely, 29·874 inches, and as

much as 0·345 inch above the mean for January, 1890—namely, 29·740 inches. The mercury rose to 30·875 inches at 9 p.m. of the 14th, and fell to 29·337 inches at 9 a.m. of the 23rd. The observed range of atmospherical pressure was, therefore, as much as 1·538 inches—that is, a little more than one inch and a half.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 39·5°, or 0·6° above the value for December, 1890. Using the formula, *Mean Temp.* = *Min.* + (*max.*—*min.* × ·52), the M. T. becomes 40·2°, compared with a twenty-five years' average of 41·5°. The arithmetical mean of the maximal and minimal readings was 40·1°, compared with a twenty-five years' average of 41·4°. On the 26th and 28th the thermometer in the screen rose to 53·7°—wind, S.W.; on the 7th the temperature fell to 23·9°—wind, W. The minimum on the grass was 19·8° on the last-named date.

The rainfall was only ·672 inch, distributed, however, over 14 days. The average rainfall for January in the twenty-five years, 1865–89, inclusive, was 2·200 inches, and the average number of rainy days was 17·3. The rainfall and the rainy days, therefore, were both considerably below the average. In 1877 the rainfall in January was very large—4·322 inches on 25 days; in 1869, also, 4·258 inches fell—on, however, only 18 days. On the other hand, in 1876, only ·406 of an inch was measured on but 9 days; and in 1880, the rainfall was only ·563 of an inch on but 8 days. In January, 1886, 3·244 inches of rain were measured on as many as 26 days; in 1887 ("the dry year"), 1·816 inches fell on 16 days; in 1888, 1·247 inches on 9 days; in 1889, 2·213 inches on 16 days; and in 1890, 2·975 inches on 21 days.

Solar halos were seen on the 18th and 31st. Lunar halos were seen on the 18th, 19th, and 23rd. The atmosphere was foggy on each of the first two days, as also on the 6th, 9th, 10th, 12th, 13th and 31st. High winds were noted on 13 days, reaching the force of a gale on two days—the 20th and 31st. Hail fell on the 17th and 24th, and snow or sleet on the 19th and 21st. Temperature exceeded 50° in the screen on only 5 days, compared with 17 days in January, 1890, and 8 days in January, 1889; while it fell to or below 32° in the screen on 7 nights, compared with 1 night in January, 1890, and 3 nights in January, 1889. The minima on the grass were 32°, or less, on 21 nights, compared with 15 nights in January, 1890, and 16 nights in January, 1889.

At the beginning of the month the cold was less intense and the air softer and moister than for a long while previously. Friday, the 2nd, was in Dublin gloomy in the extreme, damp, and foggy, and next day a decided westerly current prevailed.

The week ending Saturday the 10th was the coldest week yet experienced in Dublin during the present severe winter. It is true there was no steady frost, but temperature was usually low and at times

extremely so. Early in the week, a depression travelled southeastwards across the South of Scandinavia, Denmark, and Germany, while an anticyclone passed slowly in the same direction over the British Islands. The northerly and north-easterly winds of the latter system were peculiarly dry and searching, so that in Dublin at 9 a.m. of Tuesday, the 6th, the relative humidity was only 61 per cent. Frost set in during the afternoon of this day, and at 9 a.m. of Wednesday the thermometer stood at 24° in the screen in Dublin, having been down to 17° at Parsonstown earlier in the morning. A curious V-shaped depression now came in from the Atlantic, causing strong S.W. and S. winds and heavy rain in the south of Ireland—only a few drops of rain fell in Dublin. Next day a new high pressure system appeared, and frost returned, with fog. Saturday morning was calm, foggy, and very cold; but a brisk S.W. to S. wind sprang up in the afternoon and temperature rose quickly. In Dublin the mean height of the barometer was 30·249 inches. The corrected mean temperature was 35·4°—the mean dry bulb temperature at 9 a.m. and 9 p.m. was 34·3°. On Sunday the thermometer rose in the screen to 43·4°, and on Wednesday it sank to 23·9°. Rain fell on Sunday to the amount of ·010 inch.

Although temperature was not so low as in previous weeks, the weather of the period ending Saturday the 17th was wintry and inclement on the whole. The most striking feature of the week was the existence of a great anticyclone over Ireland and the Atlantic to the westward of this country from Tuesday to Thursday, inclusive, at a time when a deep depression, with readings of the barometer as low as 29·00 inches, was passing southeastwards across the Scandinavian Peninsula and the Baltic. This anticylone attained its fullest proportions on Wednesday evening, when the barometer read 30·97 inches at Belmullet, 30·94 inches at Valentia Island, 30·92 inches at Mullaghmore, 30·88 inches at Parsonstown and in Dublin. At Valentia Island the absolute maximal pressure recorded was 30·967 inches at 10 55 a.m. on the 14th. These were the highest pressure-readings recorded in Ireland since January 18, 1882, when the barometer rose to 30·935 inches at 10 30 p.m. in Dublin. A strong, mild S.W. wind blew on Sunday, but the upper current (cirrus cloud) was northerly. Temperature became very changeable after this, and rather low temperatures occurred at night. Very raw, damp, showery weather prevailed from Thursday to the end; but bitter cold again set in over the Continent generally on Friday. In Dublin the mean height of the barometer was 30·606 inches, pressure ranging from 30·875 inches at 9 p.m. of Wednesday (wind, N.) to 30·261 inches about 3 p.m. of Friday (wind, N.N.W.). The corrected mean temperature was 40·2°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 39·0°. The rainfall was ·124 inch on three days. Hail fell on Saturday the 17th.

Although intense cold prevailed very generally at the beginning of the

period ending Saturday the 24th, a considerable recovery of temperature took place as the week wore on, and for the first time since November, 1890, the usual winter cyclonic distribution of pressure was fully established over the Atlantic off the West and North-west of Europe. On Sunday and Monday very severe frost held over England, as well as over central and southern Europe—at 8 a.m. of Sunday, the 18th, the thermometer read 11° at York, 14° at Loughborough, and 15° at Oxford ; even in Dublin, where a fresh southerly wind was blowing, frost prevailed and the air was unusually dry and searching, relative humidity being only 52 per cent. Next morning the readings of the thermometer were 8° at Loughborough, 12° at Oxford, 16° at Cambridge, and 18° at York. A great change now set in, having been heralded by much cirriform cloud and solar and lunar halos on Sunday and Monday. At 8 a.m. of Tuesday a depression had its centre (28·95 inches) near the Shetlands, and was causing moderate or fresh gales from S.W. to W. in many parts of the British Islands. On Friday a still deeper depression (28·79 inches) advanced to the same region from S.W. These disturbances threw the weather into a very unsettled state, and frequent showers, with squalls and shifting temperature, were reported from most British stations. In Dublin the mean height of the barometer was 29·715 inches, or ·891 inch below the corresponding value for the previous week—30·606 inches. Pressure ranged between 30·447 inches at 9 a.m. of Sunday (wind S. by E.), and 29·337 inches, at 9 a.m. of Friday (wind W. by S.). The corrected mean temperature was 38·6°—the mean of the dry bulb readings at 9 a.m. and 9 p.m. being 38·5°. The screened thermometers rose to 53·6° on Friday. Rain was measured on five days—the total quantity being ·307 inch, of which ·181 inch was registered on Tuesday—the maximal daily fall for the month.

The southwesterly type of weather persisted through the last week (25th–31st) all over the North-west of Europe—that is, successive deep depressions travelled north-eastwards along the western coasts of Ireland, Scotland, and Norway, while numerous secondary depressions passed in the same direction across the British Islands and North Sea. Hence, temperature was unstable but usually high for the time of year, strong S.W. and W. winds prevailed, and rain fell frequently. In the East of Europe, on the contrary, conditions were anticyclonic, and very cold weather was reported, the thermometer reading—18° at Moscow on the mornings of Tuesday and Wednesday. On the night of Friday, the 30th, a depression rapidly approached Ireland from S.W., causing a violent gale from S. to W.S.W. during the early morning hours of Saturday, the 31st. The storm was accompanied by heavy showers at times. Rain fell abundantly in the South of England during the week. In Dublin the mean height of the barometer was 29·740 inches. The corrected mean temperature was 46·0°. The mean dry bulb temperature at 9 a.m.

and 9 p.m. was 45·3°. The screened thermometers rose to 53·7° on Monday and also on Wednesday, having fallen to 36·8° on Sunday. The rainfall amounted to ·186 inch, on three days. The prevailing wind was S.W.

In Dublin, the rainfall up to January 31, 1891, has amounted to ·672 inch on 14 days, compared with a twenty-five years' (1865-1889) average of 2·200 inches on 17·3 days.

At Knockdolian, Greystones, Co. Wicklow, 1·275 inches of rain fell in January, on 15 days. The heaviest falls in 24 hours were ·360 inch on the 20th, ·180 on the 26th, and ·160 inch on the 30th.

PERISCOPE.

THE RELATION OF DISEASES OF ANIMALS TO THOSE OF MAN.

We learn that a prominent place will be assigned, in the discussions of the International Congress of Hygiene, which is to be held in London next August under the presidency of H. R. H. the Prince of Wales, to the question of how far the diseases of animals are communicable to man, and *vice versâ*. The subject has been very lately much in the air in consequence of Dr. Koch's recent discoveries, and the appointment of a Royal Commission to investigate the subject of tuberculosis.

The Organising Committee of the Hygienic Congress have recognised the importance of the question by setting apart a special section for its discussion, and have been successful in associating with the section gentlemen of high authority in the medical, veterinary, and agricultural world. The section proposes to consider, amongst other subjects, the infectious, contagious, parasitic, and other diseases communicable from animals to man, and *vice versâ;* the methods of the propagation of diseases affecting mankind by means of animals and animal products; the infection of meat, milk, and other comestibles; and the restrictions to be placed upon the sale of infected food and the movement of infected animals. On each of these questions papers will be obtained from the highest British and Continental authorities as the basis of the debates of the section, which promise, therefore, to be of very great interest and value. The President of the section will be Sir Nigel Kingscote, K.C.B., Chairman of the Board of Governors of the Royal Veterinary College; and the Vice-Presidents will be Professor G. T. Brown, C.B., Director of the Veterinary Department of the Board of Agriculture, and Dr. E. Klein, F.R.S., Lecturer on Physiology at St. Bartholomew's Hospital. They will be assisted by a Council containing, amongst other members, Dr. Edward Ballard, F.R.S., of the Medical Department of the Local Government Board; Dr. Edgar Crookshank, Professor of Comparative

Pathology and Bacteriology at King's College; Dr. George Fleming, C.B., late Principal of the Army Veterinary Department; Mr. J. T. Reeves, representing the Worshipful Company of Grocers, which has for a considerable period made munificent grants in aid of scientific research; Professor James McCall, F.R.C.V.S., President of the Royal College of Veterinary Surgeons; Professor John McFadyen, M.B., B.Sc., F.R.S.E., Lecturer on Anatomy and Pathological Histology at the Royal Veterinary College, Edinburgh; Shirley F. Murphy, M.R.C.S., Medical Officer of Health for the County of London; Dr. J. Burdon Sanderson, F.R.S., Professor of Physiology at Oxford University; Sir John Thorold, Bart., Chairman of the Veterinary Committee of the Royal Agricultural Society of England; Dr. George Turner, Medical Officer of Health for East Hertfordshire; and Sir Jacob Wilson, one of the Governors of the Royal Veterinary College. The secretaries of the section are Mr. W. Duguid, F.R.C.V.S., Assistant-Inspector of the Veterinary Department of the Board of Agriculture; Dr. G. Sims Woodhead, F.R.S.E., Director of the Research Laboratory of the Conjoint Board of the Royal College of Physicians and Royal College of Surgeons; and Mr. Ernest Clarke, Secretary of the Royal Agricultural Society of England, to the last named of whom communications relating to the section may for the present be addressed, at 12 Hanover-square, London, W.

VIRCHOW TESTIMONIAL FUND.

On the 13th of October, 1891, Prof. Rudolph Virchow celebrates his 70th birthday. His pupils and admirers intend to commemorate this occasion by presenting him with a Testimonial in recognition of his splendid services to Medical Science. A large and representative Committee has already been formed in Germany with the view of collecting the necessary contributions, but it has been felt that this ought essentially to be an international movement, inasmuch as Prof. Virchow's followers are not of one nation, but of all. In accordance with this view the undersigned have formed themselves into a Committee, in order to give Professor Virchow's British admirers the opportunity of testifying to the gratitude which every member of the profession feels towards the man whose work in "Cellular Pathology" has so vastly contributed towards the advance of modern medical science, and may fairly be said to have made every member of the profession his pupil. The form in which the universal feeling of gratitude is to find expression has been decided upon by the original German Committee. A large gold portrait medal is to be presented to Professor Virchow himself, and bronze replicas of the same to members of his family and to some scientific institutions. The surplus—which, no doubt, will be large—is to be handed over to Professor Virchow for the furtherance, subject to his decision, of scientific work. To carry out this project the undersigned

cordially invite the co-operation of the profession in the United Kingdom. Subscriptions, which are not to exceed two guineas, may be sent to the Hon. Treasurer, Dr. Lauder Brunton, 10 Stratford-place, London, W., and will be duly acknowledged in the Medical Journals. Cheques to be made payable to "Virchow Testimonial Fund," and to be crossed. The following is a list of the Committee of the Virchow Testimonial Fund:—Sir Henry W. Acland, Bart., Oxford; Th. Clifford Allbutt; Sir John Banks, Dublin; W. Mitchell Banks, Liverpool; H. G. Barling, Birmingham; A. Barron, M.B., Liverpool; J. S. Bristowe, M.D.; W. H. Broadbent; Th. Lauder Brunton, Treasurer; Th. Bryant, H. T. Butlin; J. Chiene, Edinburgh; Sir Andrew Clark, Bart.; J. Coats, Glasgow; S. Coupland; J. Dreschfeld, Manchester; Sir Dyce Duckworth, John Evans, Sir Joseph Fayrer, D. Ferrier, W. H. Flower; M. Foster, Cambridge; W. T. Gairdner, Glasgow; Sir Alfred Garrod; W. S. Greenfield, Edinburgh; F. de Havilland Hall; D. S. Hamilton, Aberdeen; T. Holmes; Sir G. M. Humphry, Cambridge; J. Hutchinson, J. Hughlings Jackson, Sir William Jenner, Bart.; George Johnson; Sir Joseph Lister, Bart.; Sir William MacCormac; Th. Oliver, Newcastle-on-Tyne; W. M. Ord; Sir Richard Quain, Bart; Sir George Paget, Cambridge; Sir James Paget, Bart., Chairman; F. W. Pavy; Sir George Porter, Bart., Dublin; R. Douglas Powell, J. Russell Reynolds, William Roberts; Ch. S. Roy, Cambridge; J. Burdon Sanderson, Oxford; E. A. Schäfer, S. G. Shattock, Sir J. Simon; A. R. Simpson, Edinburgh; E. M. Skerritt, Clifton, Bristol; Th. Grainger Stewart, Edinburgh; Sir William Stokes, Dublin; Octavius Sturges; Th. Pridgin Teale, Leeds; Sir William Turner, Edinburgh; Hermann Weber; Sir Spencer Wells, Bart.; C. S. Wheelhouse, Leeds; Samuel Wilks; A. H. Young, Manchester. Felix Semon, Victor Horsley, Hon. Secs.

BRITISH MEDICAL SERVICE.

We have received from the War Office the following list of Surgeons on probation of the Medical Staff of the British Army who were successful at both the London and Netley Examinations. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to these gained at Netley, and the combined numbers are accordingly shown in the list which follows:—Feb. 2, 1891—T. B. Beach (gained the Herbert Prize of £20, with the Montefiore Medal and Prize of 20 guineas), 5927; E. E. Powell, 5460; C. W. R. Healey, 5325; J. W. Jennings, 5265; E. McK. Williams, 5197; H. E. Dowse, 5183; J. C. Connor, 5118; J. E. Carter, 5106; F. W. Hardy, 5102; J. T. Clapham, 5035; W. Ap. S. J. Graham, 4995; D. D. Shanahan, 4975; C. W. H. Whitestone, 4940; A. Pearse, 4880; H. D. Mason, 4645; C. D'Alton, 4643.

THE ARMY MEDICAL DEPARTMENT.

The following is the official list of the successful candidates at the recent competitive examination for commissions in the Medical Staff of Her Majesty's Army, held during February, 1891 :—

Order of Merit	Names	Total number of Marks
1	Porter, F. J. W.	3,135
2	Robinson, O. L.,	3,025
3	Brown, F. J.,	2,960
4	Healy, C. J.,	2,960
5	Stalkart, C. E. G.,	2,930
6	Gibbard, T. W.	2,925
7	Buist, H. J. M.	2,905
8	Duggan, C. W.	2,880
9	Brogden, J. E.,	2,815
10	Austin, J. H. E.,	2,780
11	Hardy, W. E.,	2,780
12	Begbie, F. W.,	2,770
13	Burtchaell, C. H.	2,760
14	Lenehan, T. J.	2,760
15	McDowell, F.,	2,760
16	Faiehnie, N.,	2,755
17	MacCarthy, J. A. O.	2,695
18	Gerrard, J. J.,	2,690
19	Stanistreet, G. B.,	2,680
20	Jameson, J. C.,	2,670

ADMISSION OF WOMEN STUDENTS TO THE EDINBURGH ROYAL INFIRMARY.

We are officially informed by Mr. J. S. Trainer, Treasurer and Secretary of the Royal Infirmary, Edinburgh, that at the meeting of the managers held on Feb. 9, 1891, it was resolved to admit women students of medicine to the Royal Infirmary. It was accordingly remitted to the medical and surgical staff to give effect to the decision arrived at, which was as follows:—1, Ward visits and clinical lectures shall be given to female students separately from the male students; 2, mixed cliniques may be allowed (on the choice of the lecturers) on special subjects, such as eye, ear, throat, and skin; 3, under no circumstances whatever shall any ward be utilised twice in the same day for clinical instruction; 4, as far as possible, no interference shall be attempted with ward cliniques and lectures already arranged for male students; 5, at present, or till their numbers exceed thirty, the women students shall keep together in one unit for clinical instruction, thus requiring only one ward or theatre for their instruction at any given time; 6, all women students, before receiving their hospital tickets, must sign a declaration that they will conform to the special rules made by the managers for their instruction.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XII.—*Hydatid Cyst of the Pleura.*[a] By GEORGE F. DUFFEY, M.D.; Vice-President, Royal College of Physicians of Ireland; Physician, City of Dublin Hospital; Professor of Materia Medica and of Pharmacy, Royal College of Surgeons in Ireland, &c.

IN an excellent paper on a case of "Hydatid Tumours of the Bones," communicated to the Pathological Section of the Academy of Medicine in Ireland eight years ago,[b] Mr. Coppinger remarked "that hydatid tumours are certainly unusual in this country." He referred, in support of this statement, to the fact that, during the quarter of a century that the Mater Misericordiæ Hospital had then existed, but a solitary instance of this variety of tumour had been met with. This was, I believe, the case of suppurating multiple hydatid cyst of the liver reported by the late Dr. Hayden to the Pathological Society of Dublin[c] in 1877. At a meeting of the same Society, in March, 1868,[d] Mr. John Hamilton exhibited a large tumour connected with the spleen which contained "an immense number of hydatids." Dr. Hayden had previously described[e] a case of echinococcus cyst of the kidney in a male

[a] Read before the Section of Pathology in the Royal Academy of Medicine in Ireland, on Friday, February 20, 1891.

[b] Transactions. Vol. I., p. 284.

[c] Proceedings. Vol. VII., p. 195. N. S.

[d] Ibid. Vol. III., p. 372. N. S.

[e] Dubl. Jour. of Med. Sci. Vol. XIX., p. 101.

dissecting-room subject. In this paper he also described a similarly obtained specimen, from the body of an aged female, of cysticercus of the gluteus maximus muscle. Another case of the same form of hydatid, affecting the deltoid muscle, was brought before this Section by Dr. C. B. Ball in 1888.[a] But beyond the four noted, I have not been able to find a record of any other case of a tumour caused by the larval condition of tænia echinococcus that has been met with in Ireland.[b] The fact of so few such cases being reported would, therefore, appear to justify Mr. Coppinger's opinion as to the rarity of the hydatid disease amongst us. But I fear that systematic autopsies are the exception, unfortunately, and not the rule in this country; and, on account of the frequent and peculiar latency of the disease, and its numerous spontaneous cures, a large number of cases may naturally escape observation, or be mistaken for other diseases. If there had not been a *post mortem* examination in the case I am about to bring under notice, its true nature would have been entirely overlooked.

Case.—James O'B., a porter in a wine merchant's office, was admitted into the City of Dublin Hospital on the 21st of January, 1891. He was thirty-one years of age, married, and had been a soldier; five out of his seven years' service were passed in India. On the 12th of June, 1890, he had come previously under my care in the hospital for a severe attack of hæmoptysis. This recurred, in a smaller degree, twice during the month he then remained under treatment. At that time I formed the opinion, from the physical signs, that he had tubercular phthisis of the apex of the left lung. His cough, which continued after he left hospital, became much worse at Christmas time, which he ascribed to getting a chill; but he persisted at his work until great difficulty of breathing, constant, violent cough, with difficulty of expectoration, pain in the chest, and increasing weakness forced him to seek admission. The dyspnœa was urgent; he was obliged to sit propped up in bed; his respirations were "whiffy"—48 in the minute—and he made violent and repeated efforts in coughing up a very scanty, thick, viscid, muco-purulent expectoration; his face and neck gave evidence of grave impediments to the pulmonary circulation; the pulse was 104, but there was no fever. Physical examination of his chest led my colleague, Dr. Hawtrey Benson, and myself to believe

[a] Transactions R. Acad. Med. Irel. Vol. VI., p. 356.

[b] Dr. T. E. Little exhibited a hydatid cyst from the liver of a dissecting-room subject at the Dublin Biological Club some four years since; and Mr. Tobin has lately successfully treated by aspiration a case of hydatid cyst of the liver in a young woman under his care in St. Vincent's Hospital. Neither of these cases has been reported.—G. F. D.

that he had a large pleural effusion in the right side, extending as high as the fourth rib, which had displaced the heart one inch beyond the right mamillary line, and that he had vomicæ in the left apex, and softening tubercular deposit in the apex of the right lung. We came to the conclusion that the effusion should be removed. This was accordingly done on the second day after his admission. The trocar and cannula were introduced in the seventh intercostal space below the angle of the scapula, and a clear, serous-looking fluid siphoned off. During the operation, alarming dyspnœa, with cough, and intense congestion of the face, neck, ears, and head occurred. The cannula was, therefore, withdrawn while the liquid was still flowing freely; the amount actually removed being forty-seven fluid ounces. Upon removal of the cannula the patient complained of a sensation of intense heat of the hands and head. This seemed to cause him more suffering than the other alarming symptoms he presented.

After about an hour's anxiety on our part, the measures adopted appeared to give him some relief; but, towards 10 o'clock p.m., there was another accession of difficult and rapid breathing—56 in the minute, with elevation of temperature to 103·4° F., and a pulse of 140. He passed into a semi-unconscious state, and died at midnight, thirteen hours after the paracentesis.

The *post-mortem* examination was made by Dr. W. R. Graves, Pathologist to the Hospital.

On raising the sternum neither lung collapsed. The pleura of the right lung was completely adherent, and there was no trace of an effusion. In detaching the adhesions around the lower half of the lung the fingers came in contact with a pouch, which gave way at once, forcibly ejecting a quantity of clear fluid, followed immediately by the extrusion of an hydatid cyst, as large as fœtal head at term. After this came a number of small, tense, circular cysts, varying in size from a pea to a marble, which had evidently escaped through the accidental rupture in the wall of the large cyst. The cyst [exhibited] was situated between the diaphragmatic and pulmonary pleura, both layers of which were thickened. Forming the sac for the cyst was a dense fibrous capsule, rough and irregular-looking on the free surface enveloping the cyst, and by its other surface intimately adherent to the adjacent structures—*i.e.*, the lung, pericardium, and diaphragm, through the thickened layer of pleura and a growth of connective tissue.

The right lung was forced forwards, upwards, and to the left; its lower lobe was reduced to the thickness of $\frac{1}{4}$-inch at its lower margin, and $\frac{1}{2}$-inch at its junction with the middle lobe; that lobe was similarly reduced in thickness, and carnified; both it and the upper lobe contained numerous miliary and caseating tubercles. In the apex of the latter there was a vomica as large as a walnut, lined with a thick membrane,

and also three smaller vomicæ in other parts of this lobe. In the left apex there was a large vomica, and four or five smaller vomicæ were in its vicinity, as well as masses of softening caseous deposit dispersed through the lobe. The pleura of the right lung was thickened and adherent; the liver was pushed down three fingers' breadth below its normal limit; and the heart, as previously mentioned, was displaced to the left; its right cavities were greatly distended with blood.

Dr. Graves made an examination of the cyst and its contents, and has also prepared microscopic sections of the capsule showing its relation to the pleura, and of the cyst wall demonstrating its laminar construction. No hooklets or echinococci were found. Attached to the endocyst there were several small elevations, presumably blood-capsules; these were of a vesicular formation, and had granular contents. In other places there were larger translucent vesicles, some of which seemed to be on the point of detachment as daughter-cysts from the germinal layer.[a]

Rare as the occurrence of echinococcus cyst is in Ireland in any part of the human body, its primary development in the pleura is one of the least frequent of its habitats even in countries in which the disease is endemic. Numerous cases are recorded in which an hydatid cyst has forced its way from the liver—its favourite seat—through the diaphragm into the pleura, or from the lung into the pleura. Indeed it was believed by Trousseau[b] and Davaine[c] that hydatids of the lung which have fallen into the pleural cavity have often been mistaken for pleural hydatids. In 25 cases of hydatids which Davaine, whom everyone admits to be an authority on this subject, examined, there was only one in which evidence existed of the primitive development of the hydatid having been in the pleural cavity. At the Berlin Pathological Institute, amongst 4,760 dissections made in ten years, echinococci were found in 33 cases, and in two only of these in the pleura.[d]

Vigla, in an admirable memoir on Intrathoracic Hydatids,[e] has collected two cases in which, he says, it was established without doubt that the cyst was developed in the cavity of the pleura. In one of these cases there was a large acephalocyst in each pleura. He also gives a case of his own which he believed to be one of pleural hydatid, in which the nature of the disease was diagnosed by him during life, and successfully treated.

[a] The specimen is preserved in the Museum of the Royal College of Surgeons, Ireland.
[b] Clin. Med. Vol. III., pp. 307, 316. Syd. Soc. Transl.
[c] Davaine. Traité des Entozoaires de l'Homme. Paris. 1860.
[d] Von Ziemssen. Cyclopæd. Vol. III., p. 568.
[e] Archives Gén. de Méd., p. 523. 1855.

Cobbold,[a] in his classical work, gives an analysis of 136 cases of echinococci cysts arranged in order of frequency as regards their situation. Of these eight were in the lungs. No instance is given of the occurrence of hydatids in the pleura. On looking through the Transactions of the Pathological Society of London, since its foundation in 1846 to the present date, I could not find any report of a case of primary echinococcus of the pleura.

In the museum of Guy's Hospital, Dr. Cobbold states there are two specimens of hydatid tumours connected with the pleura. But these are the only instances of pleural hydatids that are mentioned in this distinguished helminthologist's summary of the human hydatids, as illustrated by the specimens he examined contained in the pathological museums of London and in others elsewhere.[b]

Of 23 preparations of echinococcus cysts contained in the pathological collection of the Army Medical Department at Netley in 1864, there was only one that had its seat in the pleura.[c] Among the comparatively few preparations of human hydatids in the Museum of the Royal College of Surgeons in Ireland, there is no specimen of echinococcus tumour of either the lung or pleura.

When an hydatid cyst is met with in the lung or pleura it is generally single. Cases, however, have been reported (by Peacock,[d] O'Connor,[e] Vigla,[f] Martin,[g] and others) in which cysts were found in several other organs and situations—the liver nearly always being one—beside the lung.

As a rule, the growth of a hydatid cyst is slow, lasting "years and even decades."[h] It is reasonable to suppose that such a tumour as existed in my case would produce in its development some irritation in its surroundings. Heller states that sometimes pneumonic infiltration in the vicinity of an hydatid of the lung, or gangrene, may destroy life;[i] but, as a rule, according to Leuckart,[j] no further consequence results than the formation and thickening

[a] Entozoa, p. 277.
[b] Brit. Med. Jour. Vol. II., p. 689. 1875.
[c] Army Medical Reports. Vol. VII., p. 129. 1864.
[d] Trans. Path. Soc., London. Vol. XV.
[e] Ibid. Vol. XXXIX.
[f] Loc. cit.
[g] Australian Med. Jour., Sept., 1865; Brit. Med. Jour. Vol. I., pp. 516 and 734. 1880.
[h] Leuckart. The Parasites of Man. Translated by W. E. Hoyle, M.D., p. 643.
[i] Von Ziemssen. Cyclop. Vol. III., p. 586.
[j] Loc. cit.

of the wall of the cyst and the displacement of the surrounding tissue. Now, it will be remembered that there was extensive tubercular deposition and ulceration in both lungs in my case. Is there, then, any definite connection between echinococci and phthisis?

Vigla[a] and Dr. L. D. Bird, of Melbourne, say that hydatids and phthisis often coexist.[b] Dr. Martin, who also had a large experience, derived from practice in the same colony, has reported a fatal case of hydatid cyst of the right lung, which was complicated with phthisis.[c] In a rather extended search through the periodical and other literature of the subject, I find that Dr. Bird's statement is corroborated by reports of several other cases, published without any reference to such coexistence, in which death in cases of echinococci was due to phthisis.[d] In the case reported by Mr. J. Hamilton, that I have referred to, "the kidneys were affected with Bright's disease, and the lungs throughout contained tubercle." This exemplified, according to Mr. Hamilton, "the observation made by Tyson nearly 200 years ago, that hydatids are most frequently met with in serous cavities (?) and in *persons of broken-down constitution.*"[e] On the other hand, Dr. Stokes,[f] in quoting the statement of Andral, that out of 6,000 cases admitted in La Charité only one occurred that presented the complication of tubercle and hydatid, adds that he had never witnessed such a complication after many hundred dissections of pulmonary phthisis. The association of the two diseases may only be a coincidence; or an impairment of health, induced by the development o fthe hydatid, may possibly act as a predisposing cause in producing a condition favourable to the development and growth of the tubercle bacilli. In an interesting case in which a hydatid cyst had ulcerated into a pulmonary varix in the left lung, tubercles were found in both lungs, but were more numerous around the hydatid cyst than at the apex of the lung. Dr. Habershon, who reported the case,[g]

[a] Loc. cit., p. 529.

[b] Australian Med. Rec., March, 1871; and Lancet. Vol. I., p. 23. 1871.

[c] Australian Med. Jour., Sept., 1865.

[d] Cf. Med. Times and Gaz., Jan., p. 343, 1860; and Army Med. Reports. Loc. cit.

[e] Mr. Hamilton has not given any reference to this observation; but I have, thanks to my friend Dr. J. W. Moore, been able to consult two curious and interesting communications on Hydatids made to the Royal Society of London by Dr. Edward Tyson, F.R.S., and published in Vol. III. of the (Abridged) Philosophical Transactions (pp. 374 and 443) for the years 1683 to 1694, without, however, finding the particular statement quoted above.—G. F. D.

[f] Diseases of the Chest, p. 458. 1837.

[g] Guy's Hospital Reports. Vol. XVIII., p. 373. 1873.

regarded this as pointing to a connection between the changes around the cyst and the deposition of the tubercles. He does not appear to have had his attention directed previously to the occasional coexistence of the two diseases, of which I have adduced some evidence, but he expressed the opinion that the hydatid was the first link in the chain of the fatal disease, then pneumonia, then the impairment of health and tubercle.

In the case I have brought forward there were numerous tubercles in the portion of the middle lobe adjoining the cyst; but the tubercular disease was much more advanced in the upper lobe of the left lung, and to a less extent in that of the right, than around the cyst. I do not think there is any causal connection between the two diseases.

ART. XIII.—*Professor Koch's Treatment of Tuberculosis.*[a] By KENDAL FRANKS, M.D., Univ. Dublin; Ex-Schol. Trin. Coll. Dubl.; Fellow and Member of Council, Royal College of Surgeons; Surgeon to the Adelaide Hospital; Surgeon-in-ordinary to his Excellency the Lord Lieutenant.

AT no time in the world's history has a remedy been proposed for the treatment of any class of the many ills to which flesh is heir that has excited such a profound sensation all over the world, not only in professional circles, but among the public generally, as that which has been recently introduced by Professor Koch for the treatment of tubercular diseases. At no time has the claim of Medicine and Surgery to be ranked as sciences been so clearly established as it is now. The researches of Lister into the organisms of putrefaction and septicæmia led to the establishment of antisepsis in surgery; hydrophobia fell before the scientific genius of Pasteur; and now we are called upon, not to accept blindly or to dismiss with the sceptic's sneer, but to put to the test of experience, to prove or disprove for ourselves that which, if it prove true, will be, from two standpoints, the grandest discovery of all. The first of these standpoints is this, that it deals with a disease which, in its deadly influence on mankind, stands in the foremost place. On the 24th of March, 1882, Koch delivered an address at Berlin, in which he announced to the world the discovery of the tubercle bacillus. He then showed the important part this

[a] Read before the Section of Surgery in the Royal Academy of Medicine in Ireland, on Friday, January 23, 1891. [For the discussion on this paper see page 354.]

bacillus played in many diseases which formerly had been regarded as distinct. The strumous diseases of joints and bones, scrofulous glands, lupus, phthisis, and many others, all owed their origin to one and the same cause. "If the seriousness of a malady," said Professor Koch, "be measured by the numbers of its victims, then the most dreaded pests which have hitherto ravaged the world, plague and cholera included, must stand far behind the one now under consideration;" and then he went on to state that one-seventh of the deaths of the human race are due to tubercular disease, while fully one-third of those who die in active middle age are carried off by the same cause. And hence it is that the announcement of a cure for this widespread disease stirred public opinion to its depths, for they were few who, directly or indirectly, were not terribly interested in its truth. But, from another standpoint, this discovery, if substantiated, holds the foremost place. It is practically a new departure in the treatment of infective diseases. It opens up before us a vista in the future of all the infective diseases being, one by one, brought within our control; a hope, which but a short time ago would have appeared chimerical, that, in time, each and every disease which owes its origin to a specific organism will have its specific remedy. But, in the meantime, our duty is, in common with our professional brethren all over the globe, to test and sift this matter thoroughly—with hope, but without extravagance; with the drag of scepticism, if you will, but a scepticism which is open to conviction.

I propose, in this paper, to add my quota to the accumulating experience which is gathering thickly around us. My position is not that of an advocate who holds a brief for or against Koch's method of treating tubercular diseases. I wish merely to report the results which I have obtained after more than two months' trial of the remedy, to learn from these how far they endorse the original statements made by Dr. Koch, and especially to glean from them the class of cases in which its use is indicated, and in which the best results may be anticipated.

It is quite unnecessary to refer here to the technique of the inoculations. This has been elaborated in the journals *ad nauseam*, and no reader of current medical literature can be ignorant of the method of employing the lymph. Suffice it to say that any hypodermic syringe, whose capacity is a cubic centimetre, and in which the rod of the piston is accurately divided into tenths, will adequately perform the duty, if it be properly sterilised.

The one I employ myself I procured at Berlin, and is known as Overlach's. Its advantages are, that the plug of the piston is made of asbestos, instead of the usual rubber, cotton, or leather, so that it can be sterilised by heat without injury; and, secondly, that there is a simple arrangement by means of which the asbestos, should it become loose in the cylinder, can be screwed up so that, at all times, it accurately fits. The two most useful solutions of the fluid are a 1 per cent. and a 10 per cent., although I have often employed a 2, 4, and a 20 per cent. solution. I have found that the stronger solutions do not produce more local irritation at the site of injection than the more dilute, and that is practically none; for, in over 250 injections which I have hitherto made, I have not yet seen inflammation or abscesss result. The 1 per cent. solution in a $\frac{1}{2}$ per cent. solution of carbolic acid is most useful for injections ranging from a milligramme to a centigramme; whilst the 10 per cent. solution is employed for injections varying from a centigramme to a decigramme.

Koch's fluid is, undoubtedly, a powerful poison. It is fully established that in healthy individuals its employment in large doses may be followed by severe toxic symptoms. Its chief toxic effects seem to be on the heart, and are evidenced by cardiac enfeeblement—rapid, weak pulse, cyanosis, and collapse. In Dr. Koch's communication, published in the *British Medical Journal* on November 25, 1890, he describes the toxic symptoms produced in himself by an injection of two and a half decigrammes of the fluid. But it also acts as a special poison to living tuberculous tissue, causing it to necrose. The inflammatory action evoked in the surrounding tissues gives rise to the local symptoms and the febrile disturbance, which we know now under the classical terms of local and general reaction. It is asserted, also, that the absorption of some of the destroyed elements into the blood may, in part, account for the general disturbance; but it is difficult to understand how this can be so, at any rate in those cases where the reactionary period does not exceed fifteen to twenty-four hours, the temperature falling to normal, or below it, and remaining so until the next injection is given.

The lowest limit of the effect of the fluid for a healthy human being is about one centigramme. Koch asserts that such a person reacts either not at all, or scarcely at all, when this dose is used; and this is one of the points which require our most careful study, for upon this hinges the importance of the fluid as a diagnostic

medium. Should this statement prove universally true, or practically so, the importance of it in diagnosis is established; for we have already ample evidence of the effects of a much smaller dose of the fluid in tubercular diseases. In my own experience, I have not yet found the fluid to fail in producing its characteristic effects in any tuberculous case, when doses varying from 1 to 5 milligrammes have been used. Up to the present I have not known the fluid to fail as a diagnostic agent in any one case, whilst in several the corroborative evidence it has afforded has been most remarkable. Some writers have asserted that they have met with persons, either healthy or suffering from some undoubtedly non-tuberculous affection, who have reacted perfectly to the injection of the fluid; and they have, also, seen typical cases of tubercular diseases which did not react at all. From the large number of cases reported already, I think we must acknowledge that such cases, if they occur, are exceptional. The first of these statements is open to the objection that it is quite possible for the most expert observer to fail to detect a tuberculous deposit hidden away in some corner of the body, which, however, is sought out by the detective power of the fluid. The presence of some other diseased condition is in no way evidence that some tuberculous focus does not lurk elsewhere. The second statement, as to the failure of tuberculous cases to react, may, in the future, be accounted for by certain coexisting conditions—as, for instance, three cases of phthisis, who were at the same time syphilitic, reported by Dr. Heron, and who were found to be very refractory to the fluid. I have also observed, in cases of phthisis with much pyrexia, the scarcely perceptible effect which the injections had in increasing the temperature. In several cases, however, I have found the diagnostic power of the fluid to be well illustrated.

Case I. a.—L. S., a boy, aged thirteen and a half years, was brought to me by the master of his school on account of a pain in the right hip and knee. The boy limped a great deal, only bringing the toe of the left foot to the ground. I examined the boy carefully, both while standing erect and lying in bed, but I could not detect any physical sign of hip-joint disease; the movements of the joint were perfectly free. He was admitted to hospital on November 18th last, and treated by rest in bed and blisters around the joint. I half suspected that it might be a case of malingering, but thought it safer to act on the assumption that it was a case of incipient hip disease. When I began experimenting with Koch's fluid, I thought this would be a good case in which to use it as an aid to diagnosis. On

December 11th I gave him his first injection of 0·002 gr.; he did not begin to react for twenty-four hours, but then the temperature rose to 102·2°. On the 15th December he got 0·004 gr., twenty-hours later the temperature rising to 101·4°. On the 18th December I gave him 0·01 gr., in eight hours the temperature rising to 103·8.° A centigramme was again injected on the 20th, 23rd, and 29th, reaction being marked each time. On the 1st January he got 0·015 gr., on the 5th 0·02, the maximum after this latter being reached in nine hours = 102·6°. He was slightly delirious during the night, but was quite well in the morning. On the 11th he got 0·03 gr., on the 17th 0·06 gr., on the 19th 0·1 gr., and on the 22nd a decigramme. There was practically no reaction after either of these last two injections.

Now, this boy, I am convinced, had a tuberculous focus either in the head or in the neck of the thigh-bone. He had considerably improved under the rest and blistering treatment, so that before the inoculations were begun, the limp was scarcely noticeable. He is now apparently quite well[a]—one month after he left hospital. Had the inoculations not been done he would have gone back to school apparently cured, but with living tuberculous tissue in the bone, as the inoculations showed. He might have got, and remained, quite well; but the probabilities are that, in the knock-about life of school, we should have had him under treatment later on in a more advanced stage of the disease. My hope at present is that the tuberculous focus will have been destroyed, and probably absorbed. I shall watch his future progress with interest. But I do not report this case as an instance of cure, for it is premature to speak of it as such, but as an instance of the use of the fluid in diagnosis.

Case II. a.—F. O'H., aged nineteen, was admitted to the Adelaide Hospital on Nov. 13th, for a large ulcer on the left leg in the centre of an extensive patch of eczema. I inoculated him on Dec. 19th with 0·001 gr. in order to show to the students that what had caused reaction in a number of tuberculous cases under observation would have no effect on an individual who was not the subject of a tuberculous disease. This was followed by no reaction whatever. The next day I injected 0·004 gr. Six hours after there was some shivering, and the temperature rose to 101°. This rather upset my theory. On the 23rd I injected 0·01 gr.; nine hours later the temperature was 102·2°. It was not until after this third inoculation that I discovered that the lad had enlarged glands in the

[a] I have seen the boy since reading this paper, two months after leaving hospital, and he is perfectly well.

neck, not sufficiently large to catch the eye, but which he said he had himself noticed to exist for a considerable period before his admission to hospital. Thus the existence of tubercular foci was discovered by the lymph, which I had failed to detect. I cannot help thinking that some, at any rate, of the supposed non-tuberculous cases, which we hear of as reacting to Dr. Koch's lymph, might have been similarly explained.

Case III. a.—This is the case of a man, J. O'N., aged thirty-one, who was under the care of my colleague, Dr. Wallace Beatty, in the Adelaide Hospital. I need not enter into further details of his case than to say that the diagnosis, made on the 29th of December, was tubercular disease of the left apex, with pleural effusion at the left base. There was dulness on percussion all over the left side, with mucous ralês in front, and in the axilla. Dr. Beatty asked me to inject him tentatively with Koch's fluid. His temperature varied between normal and 100° F. On Dec. 29th he received 0·001 gr., which produced no reaction. Next day he received 0·002 gr., without effect. On Jan. 3rd, 0·004 gr.—still no reaction. On Jan. 11th, 0·01 gr., with scarcely any rise of temperature. On Jan. 14th I gave him his last injection of 0·015 gr., which was followed by a slight rise of a degree and a half. Struck by this result, which in tubercular cases I had not previously seen, I asked to see the notes, and found for the first time that no bacilli had been discovered in the sputum. I have since discussed the case with Dr. Beatty, and the conclusion we have come to is that it is a case of cirrhosis of the lung, and not a case of tuberculosis at all.

Case IV. a.—This was the case of a boy, aged nine and a half years, who was admitted to the Adelaide Hospital on Jan. 31st, for enlarged glands on both sides of the neck. An elder brother had suffered from enlarged glands in the neck, which were excised by a surgeon in Dublin. Two or three years ago the glands had become enlarged in the case now reported, but they had subsided. About six months ago they again became swollen. He had some bad teeth in the lower jaw on both sides, and both bicuspids on each side were removed about three weeks before he came into hospital. The enlarged glands were below the jaw in front of the sterno-mastoid muscle. Believing they were of a tuberculous nature, I injected 0·002 gr. of Koch's fluid on Feb. 2nd. There was no reaction. On Feb. 4th I injected 0·005 gr., on the 6th, 0·01 gr., and on the 9th, 0·02 gr. There was absolutely no reaction whatever following any of the injections. Accordingly, on Feb. 11th, I excised the glands on the left side of the neck, and entrusted them to my friend, Dr. A. M'Kee, for examination. He has informed me that after the most careful examination of a large number of sections made of the glands, hardened by various methods, he has been unable to detect the presence of tubercle

bacilli. Thus the evidence of the lymph as to the non-tuberculous nature of the disease has been fully corroborated by microscopical examination.

Case V. a.—A married woman, aged twenty-nine, admitted to the Adelaide Hospital on January 6th; had a bad phthisical history, her mother, two brothers, and three sisters having died of consumption. She had influenza herself in March, 1890, and has had a cough ever since. She had no night sweats, and her temperature was normal. Her expectoration, which was at first copious and greenish, had almost ceased, and was mucous in character. The chief physical signs were slight want of resonance under right clavicle, and a few râles. Dr. Cuming, of Belfast, was said to have diagnosticated consolidation of the right apex. An injection of two milligrammes was given on Feb. 9th, and 5 mgr. on Feb. 12th, but neither was followed by reaction. As it was simultaneously found that there were no bacilli in the sputum, we were reduced to the diagnosis that the condition was not tubercular, but was an unresolved pneumonia of the right apex.

Case VI. a.—The next case was that of a boy, aged seven, who was admitted to hospital on Dec. 4th last with ankylosis of the left hip, the thigh being fixed at a right angle to the trunk. There was no pain, tenderness, swelling, or other evidence of any active disease. There were no sinuses or scars round the joint. I determined to straighten the limb, by dividing the neck of the thigh bone, but before doing so it was important to know whether there was any latent tubercular disease in the joint. Accordingly I injected 2 milligrammes on Dec. 11th, and again on Dec. 15th, and 5 mgr. on Dec. 18th. Each of these was followed by general reaction, the temperature rising to 102·8°, 101°, and 103·2° respectively. On each occasion he complained of pain in the left hip joint. It was thus clear that the disease was still there, but in a latent state, until roused into activity by Koch's fluid. The injections were continued, of gradually increasing strength, until the 29th of Jan., when he received his second injection of one decigramme—that is, 50 times as much as he received on Dec. 11th. This was not followed by any reaction, so the injections were discontinued. The operation of division of the neck of the femur was performed on February 10th, and the case is progressing satisfactorily.

Case VII. a.—Another case in which the fluid was used for diagnostic purposes was that of a lady nurse, aged twenty-eight, who was admitted to the Adelaide Hospital on Jan. 16 for a chronic cough. She presented the usual physical signs of consolidation of the right apex. She received three injections of 0·002, 0·005, and 0·01 grammes respectively, none of

which were followed by any reaction. No bacilli were detected in the sputum. The case was therefore declared to be an unresolved pneumonia, free from tubercular infection.

I could quote other cases in which the injection of Koch's fluid gave negative evidence, but I shall rest satisfied by referring only to one more case in this connection on account of the strong contrast it affords to another case injected at the same time and with the same quantity of the fluid :—

Case VIII. a.—The case is that of a midwife, aged thirty-eight, who was under the care of my colleague, Dr. Wallace Beatty, for a small skin affection on the right cheek, a little external to and below the external canthus. It is not larger than a sixpence. In the central portion the surface is white and scar-like. Along the circumference, at its upper part, is a brownish-yellow narrow ridge of crust, which, when removed, reveals a narrow trench of ulceration. At the lower part there is more crust, and it also, on removal, discloses a shallow ulceration. There are no outlying papules. She complains at times of tingling pain or itching in it. The diagnosis was uncertain, but practically lay between lupus and epithelioma. Dr. Beatty asked me to test her with Koch's fluid. I accordingly did so on the 19th February, injecting, for diagnostic purposes, one centigramme. There was *no reaction.* A few days later the patch on the face was scraped and the removed portions examined microscopically, when it was conclusively proved that the case was one of epithelioma.

Case IX. a.—Now contrast this result with that of a boy, aged sixteen, suffering from caries of the dorsal spine, in an active stage, into whom I injected one centigramme of the same fluid, out of the same bottle, on the same day. He had been injected twice previously—the first time with 4 milligrammes, the second time with one centigramme. He ought, therefore, to have been less susceptible to the influence of the fluid, had it no diagnostic value, as some assert. But what do we see? In 11 hours his temperature had risen to 106·4° F., and in 24 hours from the time of injection it was almost normal again.

I shall not refer further to this case at present, as the treatment began only on the 11th of this month (Jan., 1891); but this reference to it now is made to emphasise what I have previously shown in these cases, that Dr. Koch's statement as to the value of the lymph as a diagnostic agent is fully borne out in my experience hitherto.

The cases to which I shall now refer may be grouped into those in which a provisional cure has been effected, those in which a

distinct improvement has been observed, those in which no benefit has resulted from the treatment, or in which an aggravation of the symptoms may have been noted.

In speaking of a "provisional cure," I would be understood to mean cases which, so far as we can at present say, are cured, or seem to be cured. It is obvious that at present it would be impossible to say that the results obtained are permanent. Under this heading I will first mention :—

Case I. b.—A boy, aged eight, who was admitted to the Adelaide Hospital in June last, suffering from caries of the cervical vertebræ. He had previously been under my care in 1889 for the same affection, and apparently recovered, leaving hospital with a stiff neck, but without other evidence of disease. When re-admitted last June, the disease had progressed considerably; he was unable to raise his head off the pillow or to turn it to either side, and the lower extremities were paralysed. During the summer months he gradually developed a retro-pharyngeal abscess, which pointed behind the left sterno-mastoid, and in September last this was opened by my colleague, Mr. Heuston. In November I took up the case. He had then considerably improved, and the paralysis had almost disappeared, but the sinus in his neck was still discharging, and there was great rigidity of the neck. On Dec. 11th I began to treat him by Koch's method, beginning with one milligr. The injections were continued in gradually increasing doses until the 19th of January, when a decigramme was used. This maximal dose was repeated on the 22nd, 24th, and 26th, when the injections were discontinued, as he no longer reacted. In all he received 13 injections. The febrile reactions were never very great, usually ranging between 101° and 103°. During the earlier injections the local reactions were marked and interesting. He complained of increased pain in the back of the neck, as he lay in bed; there were more redness and swelling around the sinus, and the discharge was considerably increased. After the fourth injection the local reaction was seldom to be noticed. The sinus sometimes seemed to close, but re-opened again in a few days. The improvement in his general condition was most marked. I have exhibited the boy to this Section. He can nod his head freely and rotate it to either side, and can run about and amuse himself as well as any boy of his age; and except for a well-marked shortening of the neck, there are no evidences now of the spinal disease. When we bear in mind the usual course of spinal caries, especially when associated with a spinal abscess, I think the result of the treatment in this case is most remarkable.

Case II. b.—A boy, aged nine, was admitted to hospital on May 1st, 1890, with extensive tubercular disease of the left knee-joint. I excised

the joint on May 4th, but the disease was so extensive, and there were so many abscesses in the soft parts in the neighbourhood of the joint, that had the parents given their consent, the limb would have been amputated. The bones, however, united well, but great trouble was caused by the sinuses in the soft parts, which continued to discharge and burrow down the leg. In November I opened up these sinuses freely, and thoroughly scraped them. None of them communicated with the bone which was soundly healed. He was much improved by this second operation, but the disease was evidently not eradicated; there remained a raw, unhealthy patch behind the knee. There were several shallow sinuses in front and at the sides of the joint, and one deeper one about the junction of the upper and middle third of the tibia. I began to inject him with Koch's fluid on Dec. 11th, the first dose being 2 milligrammes. The maximal dose of 1 decigramme was reached on Jan. 19th. It was repeated on the 22nd, but as this was followed by no febrile disturbance, no more injections were given. The highest temperature recorded during the progress of the injections was 104° F. As in the last case, the local reaction was well marked at first—pain in the limb, redness and swelling of the diseased parts. Several old scars which had not excited attention became swollen and inflamed, an inflammatory zone surrounding them. No local reaction was observed after the fifth injection. A well-marked and steady improvement took place, and a week after the last injection the boy returned to Wales, with the leg perfectly healed. He was able to walk upon it without any difficulty, except that due to the necessary shortening, the result of excision.

Case III. b.—This case, being a medical case, I will only refer to very shortly. It was that of a young man, aged twenty-one, who was admitted to hospital under the care of my colleague, Dr. Bewley, at whose request I began Koch's treatment on the 19th of Dec., 1890; he was suffering from phthisis in its early stage. He was admitted on the 9th of Dec., and his temperature chart showed that previous to the injections his temperature usually ranged between 99° and 100°, though occasionally it fell to normal, and on one occasion reached 100·8°. He was suffering from cough and expectoration of a muco-purulent character, and there were bacilli in the sputum, but the physical signs in his chest were scarcely appreciable; he was losing weight also. The injections, which began on the 19th of December with one milligramme, were continued in gradually increasing quantity until the 26th of January, when the maximal dose of 0·1 gr. was given. This was repeated on the 29th of Janaury, after which, as there was no reaction, the treatment was discontinued, and he left hospital on the 5th of February, apparently cured—that is to say, the temperature was permanently normal or subnormal; the cough had completely ceased, the expectoration was reduced to a minimum, and

was purely mucous. The bacilli had entirely disappeared from the sputum, and he had increased 7 lbs. in weight. Under any other method of treatment I think we would all have been inclined to quote this as a cure.

Case IV. b.—Miss L. W., aged twenty-four, the daughter of a medical man, has been under my care for a year and a half for a persistent cough, which medicines failed to relieve. I frequently examined the lungs, but could detect nothing wrong anywhere. The only thing I could find on examination was a roughness and thickening of the inter-arytenoid mucous membrane; but neither inhalation nor local application gave relief. In April last expectoration became profuse, but bacilli were not found in it. Dr. Wallace Beatty kindly undertook the case for me during my absence last summer, but he could not find anything in the lungs to account for her condition. She began to lose flesh and colour. I could not, in spite of the negative results of the examinations, banish from my mind the probability of latent tuberculosis. Accordingly, in December last I proposed to her to put her case to the test of the Koch treatment. She consented, and accordingly I began on the 23rd of December with 0·001 grm.; there was no reaction. On the 24th I gave 0·003 grm.; fourteen hours later the temperature reached only 99°, but she complained of her throat feeling sore. On the 26th I injected 0·006 grm.; in twelve hours the temperature rose to 101·2°, and the throat felt very sore. The following day I examined her with the laryngoscope again, but found nothing, except a slight increase in the inter-arytenoid swelling. On Dec. 28th, Dec. 30th, and Jan. 2nd, respectively, she received 0·01 grm. On Jan. 6th, 0·015 grm.; Jan. 8th, 0·012 grm.; Jan. 11th, 0·02 grm.; Jan. 14th, 0·04 grm.; Jan. 16th, 0·06 grm.; Jan. 19th, 0·08 grm.; and on Jan. 21st, 0·1 grm. The highest temperature recorded was after the injection of 0·06 grm. on Jan. 16th, when it reached 103·2°. A decigramme was administered again on Jan. 23rd and on Jan. 27th, after which there was no reaction. She returned home on the 28th. In all she received fifteen injections. Now for the result:—The cough, which had resisted all treatment for a year and a half, disappeared entirely after the fifth injection, and has not since returned, and the expectoration has entirely ceased. She has improved considerably in health and weight, and looks the picture of health. I have seen her lately (six weeks after the termination of the treatment), and she is, as far as anyone can tell, perfectly well. It is not very easy to locate the exact position of the disease from which she suffered, but the conclusion which seems to me to be the most rational is that it was a case of peri-bronchial tuberculosis, and that this would account for the absence of the tubercle bacilli from the sputum. That it was a case of tubercular disease I have no doubt, both from the symptoms, the evidence afforded by the lymph, and the rapid improvement which followed its use.

The second group comprises those cases in which distinct improvement was observed to follow the use of the injections.

Case I. c.—The first case was that of a girl, aged twelve, who was admitted to the Adelaide Hospital on Dec. 8th, 1890, on account of caries of the metacarpo-phalangeal articulation of the right thumb, involving about a centimetre of the proximal end of the first phalanx. The parts around the joint were much swollen, and the skin covering it was thin, undermined, and of a purplish-red colour. A sinus—discharging unhealthy serous pus—was situated over the dorsal aspect of the joint. In addition to this, there was a large cold abscess in the left calf, about six inches in length. The first injection (one milligramme) was given on Dec. 11th. The febrile reaction which followed reached its maximum (103·6°) in eleven hours, returning to normal at the end of thirty-eight hours. The local effects were—(1) increased swelling and redness over the joint; (2) slightly increased swelling of the abscess in the calf, the limb measuring a quarter of an inch more in circumference than before the injection; and (3) the appearance of inflammation of an old lupus patch, situated over the left olecranon, which had previously given trouble, but which had latterly been so quiescent as to have been forgotten, until brought to notice by the fluid. The injections were continued in increasing doses until the maximum of 0·1 grm. was reached on the 24th January. This dose was repeated on the 26th and 29th January, and the 3rd February, each injection being followed by a reactionary temperature of about 103° F. After the last of these injections the temperature oscillated between normal and 101°, so I came to the conclusion that the time had come to give free vent to any necrosed tissue which existed. After the injections some local reaction was generally noticeable; the abscess in the leg diminished slightly in size, and felt more fluid. She had received seventeen injections, each followed by the usual reaction, but nothing calling for comment occurred except a slight patch of herpes, which appeared on the lip after one of the later injections. I operated on Feb. 12th, and began with the thumb. The carious bone and pulpy tissue came away quite easily with the scoop, and there seemed to be a well-defined zone between the healthy and diseased structures; indeed, the sudden transition between the carious bone and the healthy was most remarkable. But I was more surprised still when I came to the abscess in the calf. As soon as it was opened the usual curdy pus poured out; I then irrigated the cavity, and as the fluid poured out of the wound it contained what appeared fragments of membrane—some over two inches square—which I was able to spread out on my hand and examine. I then passed in my finger to explore, and found the walls of the cavity quite smooth, and perfectly different from anything I had experienced before the use of Koch's fluid—the cavity had lost its pyogenic mem-

brane. Indeed, there can be only one explanation, and it is this—that the action of the lymph had been to destroy and throw off the membrane, and that this was washed out in shreds by the irrigation. The subsequent progress of the case bears out this view. The drainage tube was removed on the fifth day, and the abscess cavity was completely healed on the eleventh day, except for the incision, which was granulating well. The finger was also found to be healing rapidly.

Of course it may be said that a cure might have been brought about as well by the ordinary means at our disposal. This I quite admit, but I quote the case to show the beneficial effects exerted by Koch's fluid in such cases of chronic tubercular disease—effects which thoroughly corroborate what Dr. Koch has asserted as to the *modus operandi* of the fluid. But the next case is more remarkable :—

Case II. c.—It is the case of a little girl, aged ten, who has been under my care for the last four and a half years. When I first saw her she was suffering from caries of the lower dorsal and upper lumbar vertebræ. She was at first treated with Sayres' method, and subsequently with a poroplastic jacket. Gradually, however, a psoas abscess formed and pointed in the left groin. Two years and a half ago this was opened; at first it seemed inclined to heal up, but by degrees the sinus became obstructed below Poupart's ligament, and a second opening had to be made in the buttock. Hectic then set in, and resisted every means adopted to check it. Change of air, rest, nourishing diet, were all resorted to, but, in spite of all, hectic continued. The child became greatly emaciated, and the appetite became capricious. I even tried massage a year ago, in order to improve the general condition, but its effect was transitory. For two and a half years the temperature at night has ranged between 100° and 103° F. Towards the end of 1890 the only thing which still made me hope against hope was that she had not yet developed amyloid disease. Towards the end of December the little girl's mother came and asked me if I thought Koch's method might be of use. Of course I told her that we had no experience of it, but that I considered the child's condition so grave, and otherwise practically hopeless, that I would try it if she wished. She was admitted to hospital on Dec. 27th, and it was then found that she had recently developed a large abscess below the anterior third of the crest of the ilium, which, however, did not appear to be connected either with the spine or the hip-joint. Both legs were kept drawn up in bed; they were both extremely emaciated. The right leg she could extend slowly, and with the assistance of her hands. The left leg she could scarcely move, or allow it to be moved, without crying from pain. The sinuses, both in front of and behind the left hip, were discharging a thin

unhealthy pus. The first injection of 2 milligrammes was given on Dec. 29th. The temperature the night before was 100·8°, pulse 132, and respirations 28. The usual course regarding the injections was followed. The maximal dose of 1 decigramme was reached at the tenth injection on the 27th of January—one month from the beginning of the treatment. The sixteenth and last injection was given on the 19th of February, the last seven injections being each 0·1 grm. There was no reaction after this last, and the child went to the country on the 21st. The highest temperature reached in the reaction was 104·8° on 10th Jan., after injection of 0·01 grm. It will be observed by the chart [exhibited] that the temperature ran a very erratic course up to the 6th of January. This was due to the abscess on the right side, which was on that day opened, and its contents, which were extremely fœtid, were evacuated. The cavity was well irrigated with a 1 in 2,000 solution of corrosive sublimate, and the sac was sutured to the skin, no drainage tube being used. From that date it will be observed that during the whole course of treatment the temperature, between the reactions, has been uniformly normal or subnormal. Local reaction was well marked during the earlier period of the treatment, and was evidenced by considerable pain felt in both hips, increase of discharge from the sinuses, and some inflammation round their orifices. The child's condition steadily improved throughout; her appetite improved considerably, and she put on a considerable amount of flesh. When the treatment had ended her whole aspect had changed, and from being fretful, with a constant look of suffering on her face, she frequently smiled and looked happy. The wound on the right side was practically healed on the 26th of January. When she left hospital the sinus at the back of the left hip had closed, but the anterior sinus was still discharging. She could extend the right leg easily, and the left leg to a much greater extent than formerly. She allowed manipulation of this side without evincing pain, and I found that the limited extension power was due to a contracted psoas muscle.

Now I do not consider this case cured, but I look upon cure as probable. The improvement effected in this case, the desperate nature of which in the stage of hectic all surgeons recognise, I look upon as one of the most remarkable and unexpected I have ever seen, and this must be my excuse for having dwelt upon it at some length.

Case III. c.—This was the case of a girl, aged twenty, who was admitted to the Adelaide Hospital on Jan. 2nd, with lupus, affecting the whole of the lower half of the nose—especially the right side—and involving the mucous membrane in the anterior portion of the right nostril. She had been scraped three times in the north, and when she

came in she expressed a willingness to try anything, provided that she was not again scraped. I began with an injection of 4 milligrammes on the 2nd of January, the next day I gave ·006 grm., and the day after 1 centigramme. The seventh injection consisted of 0·1 grm., and was given on the 17th of January. The same maximal dose was given on the 21st, the 24th, and the 26th of January. After this latter she did not react, and the injections were discontinued. The highest temperature reached was 104·4°, after the fourth injection. The local reaction was well marked during the earlier part of the treatment, but was of short duration. When the general reaction was at its height—usually about ten hours after the injection—the whole end of the nose became red and swollen, and she complained of some pain and throbbing in it.

When she left hospital the external part of the nose was apparently quite cured, but it was difficult to estimate the condition of the inside of the nostril, on account of the cicatricial narrowing of the opening. I have, therefore, included this case among the list of those distinctly improved, instead of among the provisional cures. It is interesting to note the rapid course of the treatment in this case, the whole series of injections occupying only twenty-five days, during which period she received ten inoculations.

Case IV. c.—This was the case of a lady, aged thirty-seven, who got influenza in February, 1890, which resulted in phthisis. She was sent to me by her brother, a medical man, in order to try the Koch treatment. She had been under careful treatment for many months, and latterly had somewhat improved, although she was troubled with a good deal of cough and expectoration, which contained a fairly large number of tubercle bacilli. It was purulent in character. There was consolidation of the upper part of the left upper lobe, and moist râles were clearly heard in the left supra-spinous fossa. The treatment was begun on the 29th December, with the injection of 0·001 grm. A decigramme was reached on the 19th of January, and was repeated on the 21st, 23rd, 26th, 28th, and 30th of January, and on February 1st. There was very little reaction after the last three injections, the temperature never reaching 100°; and the injections were then discontinued, and the patient went to the country. Her condition then was as follows:—Consolidation of left apex. Râles very scanty, and heard only in the supra-spinous fossa on coughing, whereas previously they were clearly audible during respiration. Cough had practically ceased, and the expectoration (which did not exceed half an ounce in twenty-four hours) was mucous, but it still contained bacilli, though in diminished numbers. Dr. Wallace Beatty saw the patient with me, both at the beginning and at the end of the

treatment, and considered that the improvement in her condition was very marked.[a]

Case V. c.—This was a case of a girl, aged eleven, who was admitted to hospital on November 22nd, suffering from extensive disease of the left hip joint, with a large abscess which involved the anterior portion of the thigh below the external half of Poupart's ligament. When admitted she was markedly emaciated and in great pain; even when lying in bed she supported the affected limb with her hands, and cried out if touched. A few days after admission I opened the abscess anteriorly, a large quantity of curdy pus being evacuated. It was impossible to obtain any movement in the joint on account of the acute pain experienced. On December 11th I gave her a first injection of one centigramme of Koch's fluid. In $14\frac{1}{2}$ hours highest temperature reached (=104° F.), but the normal was not again reached until 36 hours had elapsed. She received four more injections of 0·01 grm., and then the dose was increased to 0·02 grm. on the 30th, and to 0·03 grm. on the 13th of January. Two days after this the temperature rose without any further injection to 103°; and as it continued to remain high for 10 days, I determined to explore the joint, and to give free egress to all the necrotic tissue. On the 27th of January the anterior incision was first enlarged, when a deep passage was found extending into the joint. A curved incision was then made behind the trochanter, and the joint was fully exposed. It was then found that the head and neck of the bone were lying loose and necrosed in the acetabulum. The whole of the cancellous tissue of the great trochanter was in a soft gritty condition, and so also was the shaft of the bone for about $3\frac{1}{2}$ inches. These parts were scraped out, and the wound was thoroughly irrigated and dressed, a large opening being left for drainage. The relief to the patient was great, and on the eighth day the temperature became normal. On the ninth the injections were resumed at the same dose at which they had been stopped—0·03 grm. The subsequent reaction did not reach 102°. On February 12th, 0·05 grm. given; subsequent reaction, 100·6°. The dose was then increased to a decigramme, and was given twice a week.

Of the ultimate result in this case I cannot at present speak

[a] The patient, at my request, returned for inspection and further treatment, if necessary, on the 4th March. On the 5th I injected 0·05 grm.; this was followed by a reaction, the temperature rising in eight hours to 103°, and returning to normal in nine hours more. On March 6th I injected 0·1 grm., and again on March 9th, 11th, 13th, and 16th. There was no rise of temperature after the last two, so she was allowed to return home. During this fortnight of treatment the sputum was carefully examined on three separate occasions, but *no tubercle bacilli* could be found. The general improvement continues, and she has steadily increased in weight and colour. She has promised to return again in a month, in order to ascertain the permanency of the cure.

with any certainty, as the patient is still, of course, under treatment; but some of the immediate results call for notice. In the first place, there can be no doubt that when the joint was exposed the diseased parts were found in a much more disintegrated and delimitated a condition than is usually found. Hence it was much more easy to remove them, and to do so without sacrificing healthy bone tissue in the process. In the next place, considering the extremely unfavourable condition of the parts and the extensiveness of the disease, the patient has since made an amount of progress towards recovery that I believed scarcely possible. She looks very well, and is in very good spirits, and practically suffers no pain except when the wound is dressed. In this case, also, I believe the patient has derived considerable benefit from the employment of Koch's fluid.

The above cases I have detailed shortly, because they are more or less typical. I could add several others, did time allow, but they would not illustrate more points than the cases already given. I shall, therefore, pass on to the last group, which I must deal with very shortly. This group comprises four cases in which either no benefit resulted, or in which the symptoms seem to have been aggravated by the disease.

Case I. d, was that of a boy, aged ten, with enlarged glands in the neck, below the angle of the jaw on the right side. He reacted well to the injections, of which he received twelve, the last being 0·1 grm., but I cannot say that any improvement resulted in the local condition, and I subsequently was obliged to excise the glands.

This is in marked contrast to another case of extensive glandular enlargement undoubtedly tubercular, at present under treatment, in which the improvement is obvious: —

Case II. d.—This is the case of a man, aged twenty-one, with incipient phthisis, presenting the usual symptoms of cough, slight expectoration, &c. He has received twelve injections, the last of which was a decigramme. He has reacted to the inoculations normally throughout.

In this case there has been no improvement, and certainly no aggravation of the symptoms. He is practically in the same state he was when the injections were begun. Bacilli have not been found in this man's sputum.

Case III. d.—This was a youth, aged nineteen, who had influenza in April, 1890, after which he developed phthisis. When he came under

observation it was ascertained that he had disease of the right apex, extending down to the nipple, over the whole of which area muco-crepitant râles were distinctly audible. The base of the left lung presented the physical signs of a pneumonia breaking down, extensive râles being heard all over it. The temperature previous to the inoculations ranged between 101°. and 103°. He received eight inoculations, ranging from one milligramme to a centigramme. At first he seemed to derive some benefit, the cough and expectoration becoming less, but there was no abatement in the temperature. Later on, as the chart shows, the temperature increased, and the injections were discontinued. There was very little change in the physical signs; but as the boy seemed to be daily losing ground he was allowed, at the request of his family, to go home.

In this case I am not sure that the injections did harm, but I am sure they did no good.

Case IV. d.—I met with the same experience in an advanced case of phthisis, under the care of Dr. James Little; and the results in both cases have convinced me of the utter uselessness of the lymph in these cases, and I have determined not to employ it again under similar conditions.

A review of all these cases leads me to form the following conclusions, which time and a more enlarged experience must either confirm or condemn. As far as my present knowledge goes, I think I am justified in provisionally concluding:—

1. That in Koch's lymph we have a very delicate and a very reliable means of diagnosticating the existence or absence of tubercular disease.

2. That in surgical affections the best results are attained when operative procedures follow the completion of a course of Koch's treatment.

3. That in some cases this is not possible when the destruction of the tuberculous tissue is accompanied by suppuration, the retention of which gives rise to febrile symptoms independent of the injections.

4. That in such cases a free vent must be given to the discharges before the treatment is continued.

5. That there is evidence to show that the necrotic changes induced by the lymph in the tuberculous material separates them so completely from the healthy tissues that their subsequent removal by operation is rendered more easy, more thorough, and with less sacrifice of healthy tissue than by the ordinary measures.

6. That subsequent recovery is more rapid.

7. That cures can be effected in cases of early phthisis. Whether a return of the disease may take place, it is impossible to state at present.

8. That in advanced cases of phthisis the treatment by injection is not only contra-indicated, but may increase the fever and hasten the progress of the disease.

9. That in doubtful cases of phthisis a few small injections of the fluid will indicate whether the treatment should be persevered in or discontinued.

10. That the temporary decrease of cough and expectoration are not reliable as evidence of ultimate benefit being derived, but that a disappearance of pyrexia *between* the injections is a most favourable sign, whilst no reduction or an increase of fever should warn us to stop the injections.

11. That if the earlier injections are followed by no contra-indications to its use, they may, without risk, be steadily and even rapidly increased.

12. That a decigramme may be considered a safe maximal dose. I have no experience of the effect of larger doses than this.

13. That although some good is derived from the smaller doses, cases come to a standstill, and progress either not at all, or very slowly, unless the larger doses (1 to 10 centigrammes) are used.

14. That while the fluid may prove dangerous to life in certain cases of internal tuberculosis, such as extensive pulmonary disease, tubercular disease of the intestines, spleen, brain and its coverings, in surgical affections and in early phthisis the dangers have been greatly exaggerated.

In conclusion, and in support of this last statement, I will give a short summary of my experience. I have up to the present administered 264 injections of Koch's fluid. In no single case has an abscess formed at the site of inoculation; I have not yet met with a case in which the injections were followed by a cutaneous eruption; in two or three cases I have noted a small herpetic eruption round the mouth. Whether this experience is accidental and peculiar, or whether it is the result of the very careful manner in which the solutions have been made for me by my friend, Dr. Piel, in the Chemical Laboratory of the Royal College of Surgeons in Ireland, I cannot say. In two or three cases the injections were occasionally followed by severe epigastric pain; but in no case have I seen any dangerous symptoms follow.

With the experience I have hitherto had, which I consider is of a most encouraging kind, and with the expectation that in the near future, in the very nature of things, our materials and our methods will improve, I cannot join in the thoughtless or prejudiced outcry which has been raised against Dr. Koch's method of treating tuberculosis—a method which may ultimately prove to be one of the greatest benefits conferred by a scientist on mankind.

ART. XIV.—*On Extraction of Parietal Intra-Uterine Fibro-myomata through the Natural Passages by means of Professor Vulliet's method of Dilatation by Tampons.* By DR. EMILE JUILLIARD. Translated by CHARLES G. CUMSTON, First Assistant at Docent Kummer's Clinic, Geneva. Part III.

(*Continued from p. 116*).

Third series: Cases of resection followed by neither enucleation nor forced enucleation:—

CASE IX. (Vulliet, *loc. cit.*, page 9). In August, 1884, I operated at the Maternity on a fourth case. Mrs. G., aged fifty-three, complained for ten years of abundant loss of blood every two weeks. Has always had anæmia, is feeble, and the gravity of her condition justified energetic intervention. I examined by intra-uterine touch and discovered an interstitial fibroma situated in the posterior wall; the maximum of development was a little to the right of the median line. I made an incision the entire length of the uterine wall about a centimetre deep; no complication. The patient remained in bed two weeks and then left for the country. Two weeks later she returned to the Maternity. I did not see her, and it was Dr. Fontanel, the Assistant of the *service*, that received her. I heard from him that no hæmorrhage appeared, and that the patient felt and appeared better. Since then she has not come to the Maternity, feeling probably too well to come for her own interest. In Feb., 1887, we looked her up. Mrs. G. was perfectly well; she attends to her occupations as schoolmistress. Her uterus is double the normal size. I believe that there exists another fibrous tumour which keeps it thus enlarged; but this tumour is probably sub-serous, and gives rise to no symptoms.

CASE X.—Mrs. M. D., aged forty-six; three confinements, one abortion, which kept her in bed six months; she cannot tell what the complication was; no heredity in the family; domestic troubles. Menstruation regular until 1883. Since this date, discharge more frequent and very abundant, every two or three weeks lasting eight to ten days. Subjective

symptoms: feeling of weight and discomfort in abdomen and kidneys; pains sometimes sharp. In 1884 the discharges of blood became more abundant; to the metrorrhagia are added white and yellow discharges; micturition frequent; enlargement of abdomen. She underwent different treatments, principally cauterisation of the cervix. Prof. Vulliet was consulted on Aug. 24, 1886. General condition: Uterine facies, thin, projecting abdomen, digestive trouble, anæmia. Local condition: Abdominal tumour situated in the middle, as large as a six months' and a half uterus, hard and resisting; enormous cervix, its entire left lateral segment is considerable. The external orifice assumes a semicircular shape, and is pushed to the left, on account of the projecting tumour; it admits two fingers, which penetrate easily to a distance of 2 or 3 centimetres. All movements given to the cervix are reproduced by the tumour. The cavity measures 18 centimetres. By the introduction of large sounds, drawing the organ down and bi-manual exploration, the tumour is found to be interstitial, situated in the right lateral wall. Vulliet was struck by one peculiarity; this was the softness of the tumour. He commenced at once the dilatation of the cavity with iodoform tampons. After three or four *séances*, 10 centimetres into the cavity could be seen by means of an intra-uterine speculum. Intra-uterine touch gave the exact relation of the new growth to the walls. It was a large tumour, entirely abdominal. The uterus had kept its shape, notwithstanding that the right horn was evidently more developed than the left. As high up as could be felt, the left wall was thinned. There was no projection into the cavity. Vulliet made a longitudinal incision, in order to loosen the internal layer, at three different times, allowing a repose of two weeks between each *séance*. At the same time, he ordered faradisation and ergotin, so as to push the neoplasm to the side weakened by the incision. The last incision was made about the middle of October. A watery running was produced. Some weeks after, the fibroma had gradually diminished. The difference in volume was more marked in the bilateral and antero-posterior diameters. The discharges stopped, the patient became gay, strong, and active. The abdomen had its normal dimensions. The incisions had not been followed by spontaneous enucleation, but they had caused, with the aid of electricity, an absorption and a remarkable hæmostatic effect. This continued for three months, when suddenly, about the beginning of January, without any known cause, during the absence of Prof. Vulliet, the patient was taken by a series of *malaises*. The abdomen became large and painful on pressure; no vomiting, cephalalgia, or fever. Upon his return, Vulliet found the symptoms very different from those in August; the abdomen had become greatly swollen. The tumour reached above the umbilicus. By abdominal palpation fluctuation was felt in certain parts of the neoplasm. Little by little the inflammatory symptoms sub-

sided, but the tumefaction remained. The diagnosis was undecided. Was it an œdema of the fibroma and the formation of a cyst? Finding a spot where the fluctuation appeared pronounced, an exploratory puncture was made: this gave no result. But the fluctuation becoming more evident and more extensive, a second puncture was made fifteen days later; it gave issue to four litres of non-sticky, grayish-yellow pus. Following this second puncture the patient had a few days of relief and repose, but the liquid soon reappeared. Towards the end of February the fluctuation was again evident in the entire tumour, and signs of absorption showed themselves in a slight pneumonia, probably septic. In presence of these alarming symptoms the urgency of an intervention was felt. But what intervention? Laparotomy with total hysterectomy could not be thought of, for, on one hand, the patient was very feeble, and could not stand the shock; on the other hand, the tumour was too large, too diffused, and its adhesions were probably too numerous for one to count on a radical operation with any chance of success. Prof. Vulliet decided to make an exploratory incision, and, on account of the circumstances, to fix the walls of the cyst to the lips of the abdominal wound; to empty and scrape the cavities after having destroyed the partitions dividing them, and so try to procure a fixation of the fluid tumour by a consecutive drainage. The patient was etherised on Feb. 28, 1887. Having made an incision through all the abdominal tissues, 10 centimetres in length, Vulliet reached the uterus, fastened it by sutures to the lips of the abdominal wound; then an incision was made in the uterine wall, from which 12 litres of nasty pus was withdrawn. The cavity was washed with a solution of corrosive sublimate ($\frac{1}{1000}$), and a drainage-tube, of one and a half centimetres in diameter and 15 centimetres in length, was introduced. Every day the cavity was washed with an antiseptic solution. As the cavity diminished in size a smaller and shorter drainage-tube was inserted and the larger one removed. The patient got well with astonishing rapidity. After the month of May she resumed her occupation. At this time she experienced no discomfort, and all physiological functions were normal. The abdominal portion of the tumour is only noticed in the part where it is fixed to the wall; the cervical portion is considerably atrophied. Mrs. D. may be considered as cured; she is forty-seven; the menopause will soon render a new growth of fibromata improbable. The history may thus be summed up:—1st. A fibroma, probably œdematous from the commencement. 2nd. Œdema is reduced under the influence of the incisions, ergotin, and electricity. 3rd. Reappearance of œdema when the incisions were cicatrised. 4th. Formation of a cyst in the tumour. 5th. Puncture leading to suppuration of the cyst.

I have quoted this case, even though the intervention did not

cause expulsion of the tumour by the natural passages. I think it proves that œdema and cystic degenerescence tend to produce conditions in which one cannot count on spontaneous expulsive efforts, which are absolutely necessary after incision. But, I believe that, even in a similar case, Vulliet's operation by the natural passages and by the interior of the dilated cavity, may prove of great service. This patient was relieved of a tumour to the same extent as if a sub-vaginal amputation of the uterus with fixation of the stump in the wound had been performed. It matters little whether the uterus be fixed by the edges of an incision made into the wall, or by the surface of amputation, if the remaining uterine mass cause, neither trouble nor pain and its volume is insignificant; besides, the dangers were not as considerable as if laparo-hysterectomy had been performed. It may be advanced that we produced infection by the incisions and by punctures. In reply I would say, that the uterus was already the seat of an ichorrhœa and that the infection could have been produced as well by the traumatism of laparotomy as by the operations we performed.

Fourth series: Where there was only dilatation without incision:—

Case XI.—Mrs. L. R., aged forty-six, married; three normal deliveries, one abortion; menstruation regular until 1885, when the discharges became so abundant that there was an interval of only two or three days between them; dysmenorrhœa intense; hæmorrhagia commenced ordinarily by vomiting.

February 17, 1887.—Professor Vulliet was called into consultation by Dr. R. Mrs. R. was in a very grave condition. During the day she had had an attack of uræmia, as well as the vomiting characteristic of intestinal obstruction; much albumen in the urine. Upon examination Vulliet confirmed Dr. R.'s diagnosis. These troubles were due to compression by a tumour completely obstructing the pelvis, pressing the rectum and bladder against the bones. The fingers could not be introduced behind the symphysis to find the cervix, which was pushed high upwards. Tympanites did not permit of abdominal palpation, so that, in short, it was a case where an exploration could not be obtained, and which demanded an urgent intervention. The uselessness of the efforts at reduction led to the conclusion that the mass was fixed by adhesions. Nevertheless, it was decided to try vaginal and rectal irrigations and cold applications to the abdomen. When the patient was better she entered Professor Vulliet's private clinic. The tumefaction had not diminished much, and to save the life of the patient an operation was necessary, which presented itself under very bad conditions. The

patient was etherised, Vulliet not wishing to operate without trying reduction. He was about to give up when it seemed to him as if the tumour was slightly displaced. He commenced again, and suddenly the fundus uteri swung above the promontory, and at the same time the cervix came into place. The tumour reduced reached to the umbilicus. This reduction changed the physiognomy of the case. Extirpation by laparotomy might have been tried, which presented no special difficulties, but Vulliet preferred to have recourse to dilatation. When the uterus was largely dilated he could find nowhere a circumscribed tumour. The entire organ was hypertrophied; the walls were uniformly thick. It was probably the kind of new growth described by Virchow as general hyperplasia of the uterine fibro-muscular tissue. A Hodge's pessary was introduced to prevent another retroversion. This woman is at present well. The uterus has considerably diminished in volume.

In this case if reduction had not been accomplished, it would have been necessary to perform sub-vaginal amputation of the uterus, while, when once reduction was accomplished, the case became entirely different; the urgency of operating disappeared, and tamponing availed to bring about a considerable diminution of the hyperplasia and its symptoms. Dilatation in a like case is replaced by an operation which gives many chances for a fatal ending.

Case XII.—Mrs. A. H., aged thirty-three, married, multipara, anæmia for several years. In 1882 she received bad treatment from her husband—kicks, &c. Since then she experiences continual contractions in the abdomen, constipation, frequent nausea. Menstruation always regular. Since 1883 she has had watery discharges and whites. She came to the Policlinic in September, 1887. She had not consulted a doctor. General condition: Well built; anæmic; abdominal facies. Local condition: Projecting abdomen; voluminous uterus, extending four fingers' breadth above the umbilicus, situated rather to the left; cervix normal, closed; anterior *cul-de-sac* relatively free. In the posterior *cul-de-sac* is felt a round body, with an even surface, smooth and voluminous. Sound enters fifteen centimetres deep. Dilatation with laminaria and prepared sponges, combined with iodoform tampons; these were well supported. In six days two fingers could be introduced into the uterus just above the internal orifice. At this point the anterior wall appeared quite free. In the posterior wall is felt a convex tumour, hard and fibrous, commencing just above the internal orifice. As I was alone I could not bring down the organ; and as the cavity was very deep (fifteen centimetres) for exploring with only two fingers, I continued the dilatation by introducing eleven iodoform tampons, each as large as a walnut.

Vulliet being obliged to leave for a certain time, and not wishing to undertake the case, I stopped the dilatation for the time being. The patient returned in November. At the examination I was astonished at the diminution of the tumour—the uterus had fallen three fingers breadth below the umbilicus. Thinking that this happy result might be due to the intra-uterine iodoform tamponing, I recommenced the dilatation.

November 9.—Laminaria.

November 10.—10 iodoform tampons in the cavity, and prepared sponge.

November 11.—15 iodoform tampons and large prepared sponge.

November 12.—19 large iodoform tampons without sponge.

November 13.—3 laminaria, separated by tampons.

Before each *séance* of tamponing, intra-uterine irrigation with corrosive sublimate solution. At the end of five days the dilatation was at the same point as when I left off the first time. Having kept this degree of dilatation for four weeks I left the patient at rest, and commenced again about the 15th of January. At each dilatation the uterus was notably reduced in size. It augments, it is true, in volume at the time of menstruation, but afterwards it comes back to the proportions it had before. In spite of these relapses a regular reduction in volume was obtained, and the greater part of the *malaises* as well. Mrs. H. can continue her daily occupations.

I have mentioned this case although there was no surgical intervention to extirpate the new growth; it supports certain ætiological considerations as to fibro-myomata that I mentioned in the commencement of this memoir. This is not the only one; in the greater number of cases that underwent tamponing, the volume of the new growths diminished very much. The fibromatous tumour seems to be a kind of goître of the uterus on which iodoform appears to act in the same manner as in cervical goître.

The following two cases were kindly communicated to the translator by Professor Vulliet, and have never been published :—

Case I.—Mrs. P., aged forty-two, pluripara, consulted Professor Vulliet in July, 1885, for a large fibroma which had reached the level of the umbilicus some time previously. She lost blood in abundance during and between her periods. The Professor performed dilatation; the hæmorrhages stopped. In August and September the menstruations were normal. In October the hæmorrhages appeared again, and in December she came and begged to be operated upon, being poor she could not be detained at home by her sickness. Having already performed dilatation, I had been able to foresee that it would be very easy to obtain, in a short

time, a large dilatation of the uterus. This consideration, as well as the splendid results that enucleation had given me, encouraged me to have recourse to this method. I regretted, as will be seen later on, having changed the rules which had guided me before—rules, in accordance with which, I had applied my operation only in the case of small or medium-sized myomata. In this case I tried to operate in a space measuring 18 centimetres, and on a uterus reaching to the umbilicus. On November 8th I commenced dilatation; on the 12th it was so complete that I could introduce four fingers into the uterus. By bi-manual palpation I could distinctly feel a fibroma as large as a child's head, situated at the fundus of the uterus in the superior and posterior walls. Being absolutely interstitial, it caused no projection in either the interior or exterior of the organ. I cut down on it, making a long incision into the capsule, this incision was not deep; no complication. Two days later the patient entered into labour which lasted two hours and then stopped. The next day I introduced my finger into the uterus, I felt a little mass of fibro-myomata forming a hernia into the half-opened inferior part of the incision. I introduced new tampons, hoping to produce a spontaneous delivery. Labour commenced again during the day, but was feeble. On the next day things were the same. The woman having lost blood during two years was very weak. On the evening of the 16th of November there was a slight elevation of the temperature. On the morning of the 17th the fever having increased, and the patient's expression presenting a certain degree of alteration, I foresaw the danger. Introducing the entire hand into the uterus, I made fruitless efforts to seize the new growth, and succeeded in drawing down only insignificant fragments. Placing the patient in the genu-pectoral position, with the aid of my intra-uterine speculum I could see that part of the new growth which formed the hernia in the incision, but could get no further. My inability to extract or enucleate the growth, resulted from the fact that the field of operation was situated too high up. I could not reach it either by downward traction or by pressure from above. I was certain that I could easily operate on the entire neoplasm if it were only three or four centimetres lower down, for I had every facility for manœuvres in the breadth of the cavity. I proposed abdominal hysterectomy, but the patient having had shooting pains absolutely refused to submit to the operation, hoping that the affair might terminate by delivery. She died in the night of the 17th.

I will not argue the point that hysterectomy would not have probably given another result, for the patient, bloodless and worn-out, presented the most unfavourable conditions for a laparotomy. I restrict myself to the statement that the only fatal case occurring after the application of my method is just this one, where I transgressed the limits that I had proposed before my first publication,

and I draw from this case this conclusion—that enucleation must not be attempted when the fibroma is situated too high for one to force its extraction at the first sign of infection.

Case II.—Miss R., of Lyons, aged sixty-five, virgin, menstruated at twelve years; health excellent up to the age of forty-five. She then noticed that she was getting stout; she performed palpation on herself, and felt some hard and movable masses in her abdomen which protruded on each side of the linea alba, and reached, she said, at this time a hand's breadth above the pubes. Having no pain she did not consult a doctor. At the age of fifty-two she was suddenly and without any appreciable reason attacked with peritonitis, which appears to have been severe. She was already convalescing from this peritonitis when she was attacked by an acute affection of the chest, which put her life in danger. This complication is important. I take note of this pleurisy or pneumonia for it seems to have given rise to embolism as will be seen later on. Miss R. was in bed 63 days; she never recovered her former health; her menstruation, which had been normal until the peritonitis, never once appeared again. As she suffered from her abdomen, she was sent by her doctor to Lyons. The specialist consulted, diagnosticated a fibroid tumour and advised subcutaneous injections of ergotin. This treatment produced no improvement, but the patient, although gradually becoming more feeble, did not try any other. She came to Geneva, August 6th, 1888, to consult Professor Vulliet. The examination showed the following: a pale, nervous woman, with cachectic aspect; she walked with difficulty on account of pains and abdominal weight; she lost a clear, transparent, yellow liquid in great quantity. Abdominal palpation and vaginal touch revealed a median tumour, embossed, of irregular consistence, feeling in certain parts as hard as stone and, wherever the finger pressed, arterial pulsation could be felt; it reached the umbilicus, the fundus uteri formed a ball as large as an orange and extended on both sides in the form of horns; the horns came within about three centimetres of the superior anterior iliac spines, and both ended in a swelling as hard as bone; the tumour was slightly movable, causing the posterior *cul-de-sac* to move with it. It was impossible to introduce a small whalebone sound more than two centimetres; this caused a severe hæmorrhage. The patient entered Professor Vulliet's clinic, and dilatation was practised—this was extremely difficult and laborious, and was performed very slowly. In the first phase (six days) only a progressive catheterism with soft sounds was performed. In the second phase sticks of laminaria were twice introduced. In the third phase dilatation was produced only by tampons. At the end of fifteen days the cavity was widely open and admitted a finger and blunt curettes as well as irrigation cannulas of large dimensions. There was no fever and the patient felt better, as if the dilatation alone

had produced relief. *Examination by intra-uterine touch :* the patient having been anæsthetised, the Professor introduced his finger into the uterus; it entered with ease but, as the tumour did not descend either by pressure from above or by traction by forceps, there was no means of penetrating more than five or six centimetres into the cavity, which measured twelve centimetres in depth; as far as the internal orifice the consistence of the uterine walls was normal and supple, but from this point the finger felt as if it penetrated into a box of bone or stone, so great was the rigidity of the walls; the organ could not be bent or moved in any direction, it was perfectly rigid; in front and in the back only was there a certain suppleness. The dilatation was obtained only by means of these two zones; the rest did not seem susceptible of expansion. The entire anterior face of the walls of the parts accessible to the finger were covered by voluminous buds. A curette being introduced brought out about 100 grammes of buds, mixed with friable pieces, which appeared like degenerated fibroid tissue. Vulliet was about to stop the scraping, which did not bring anything else away, when he felt the instrument touch a hard surface, which gave the same sensation as a vesical calculus might give when touched by a metallic sound. It was impossible to withdraw the smallest piece capable of showing the nature of this hard body. The uterus was well irrigated, and then tampons were introduced. Forty-eight hours after, attempts were again made, which withdrew a small quantity of a crushed and shapeless calculus. A microscopical examination was made, and it was found that there was a new growth, composed of fibroid tissue, having undergone calculous degeneration, and complicated with an endometritis. It is useless to describe in detail the numerous remedial measures adopted to combat this disease. During six weeks this patient was placed on the operating table every second day, and, by means of the curette and forceps serving as lithotrites, we extracted more than 250 grammes of *real stone.* Sometimes this was only *débris*, in the form of grit; sometimes irregular pieces, of which the largest was as big as an almond, were extracted. Some seemed to have been broken by the operation, while others produced the impression of an independent nucleus, offering the shape of little shells, and retaining on their surface certain imprints—due probably to the moulding in some recesses of the shell; several must have been encased in the wall. As these foreign bodies were removed the uterus became smaller; at the end of a month it did not reach above the symphysis. The region of the horns was then attacked. Their extraction was executed in the same manner as for a calculus in a canal. The first extracted were from one to two centimetres in diameter; the others, as they approached the more external parts of the horns, were smaller. I collected all the *débris*, and gave it to Professor Zahn. At the end of six weeks' treatment the uterus was in its normal condition; the

consistence everywhere the same. Neither the sound nor bimanual examination revealed the existence of a foreign body. In spite of this long series of operations the patient gained her strength and flesh, and these multiple extractions had caused only slight sufferings compared with those occasioned by any uterine dressing, even in a most tolerant uterus.

If we take into consideration the facts established by this case, we find—1st, general augmentation in the volume of the uterus; 2nd, an infiltration or a calculous deposit in the interior of the walls of the organ; 3rd, fibroid tissue in abundance. These facts as well as a microscopical examination, lead us to diagnosticate multiple interstitial fibroma or fibroid infiltration, having undergone calculous degeneration. Scraping opens the capsule, and by the opening thus practised the extraction of the calculous deposit is mechanical. A wide and permanent dilatation by tampons can alone permit such an operative procedure, otherwise abdominal hysterectomy would have been resorted to, and this presented itself in very bad conditions. This patient, who had recovered her health entirely, died six weeks after her recovery in a most sudden manner; she presented no abdominal symptoms and no swelling of the legs. The family would not consent to an autopsy, so that nothing could be learned as to the nature of the cause of death.

Conclusions.—1. Vulliet's method is applicable whenever a notable disproportion exists between the depth of the uterine cavity and the largest diameters of the tumour. 2. It can produce a radical cure of fibromata when there is a layer of contractile tissue on the peripheral side, and when the neoplasm does not present degenerations which alter its consistence. 3. Antiseptically conducted, it can take its place in the first rank of operations which are not dangerous. 4. It conforms with the principles of conservative surgery inasmuch that the uterus is not mutilated, and that it does not necessitate castration of the uterus. 5. It widens the cycle of operations performed by the natural passages. 6. The dilatation exercises an evident hæmostatic action. 7. Iodoform tampons appear, as topical application, to produce a lasting reduction of the neoplasm.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON PUBLIC HEALTH.

1. *A Manual of Public Health.* By A. Wynter Blyth, M.R.C.S., L.S.A., Fell. Chem. Soc., Fell. Inst. Chem., Barrister-at-Law, Medical Officer of Health and Public Analyst for St. Marylebone, &c. London: Macmillan & Co. 1890. 8vo. Pp. 653.
2. *Text Book of Hygiene.* A Comprehensive Treatise of the Principles and Practice of Preventive Medicine from an American Standpoint. By George H. Rohé, M.D. Second Edition. Thoroughly revised and largely re-written, with many Illustrations and valuable Tables. Philadelphia and London: F. A. Davis. 1890. 8vo. Pp. 421.
3. *Hygiene and Public Health.* By B. Arthur Whitelegge, M.D. London, Paris, and Melbourne: Cassell & Co. 1890. Pp. 537.
4. *Aids to Sanitary Science, for the Use of Candidates for Public Health Qualifications.* By Francis J. Allen, M.D. London: Baillière, Tindall, & Cox. 1890. Pp. 236.

No more conclusive evidence of the rapid strides which State Medicine is making at the present day can be adduced than the fact that four works such as those we now propose to review should have issued from the English and American press within a few short months of the year 1890.

1. Mr. Wynter Blyth is a many-sided man, and he has written a many-sided book of rare excellence. His "Manual of Public Health" has appeared just at a time when a test of special knowledge is demanded of all who are engaged in the Medical Department of the Public Health Service in Great Britain. Like the well-advertised "Waverly Pen," his book has "come as a boon and a blessing to men."

The work is divided into twelve sections, including forty chapters. It is very beautifully printed, and richly illustrated with fifty-

four woodcuts and a series of nine lithographic plates, most of which latter have been drawn and coloured by Mrs. Wynter Blyth. Besides these, there is an instructive general map of the main drainage system of London, as well as a diagram of curves showing the monthly admissions into the Metropolitan Asylum Board Hospital of cases of scarlatina, enteric fever, and typhus, from 1872 to 1888. The seasonal autumnal prevalence of the two former diseases is clearly brought out in this diagram, which is quite distorted by the scarlet fever epidemic of 1886–88.

A fair idea of the scope of Mr. Blyth's work may be gathered from the sectional contents, which are—statistics; air, ventilation, and warming; meteorology; water supply; drains, sewers, sewage disposal; nuisances; disinfection and disinfectants; zymotic (micro-parasitic) diseases; isolation hospitals; food and diet; the duties of sanitary officers; and the inspection of food.

The section on Statistics embraces (in Chapter III.) a learned description of aids to calculation which are in use among statisticians, such as logarithmic tables, Professor Fuller's ingenious spiral rule, and the arithmometer. All this is tolerably "stiff" reading, but to master the details of the mechanism and method of using these last-named instruments would, doubtless, reward a medical officer of health engaged in elaborate calculations. Since either Edmonson's circular arithmometer or Thomas de Colmar's straight arithmometer "will add, subtract, multiply, divide, and extract the Square Root," it is worth while to learn how to use these machines. "As a sample of the speed of operation," says Mr. Blyth, "it may be stated that the following multiple is worked in less than half a minute:—93,857,926 × 987,416,381,792 = 92,676,853,693,421,283,392."

The author's arithmetical bent declares itself also in Section II. on "Air, Ventilation, and Warming," in which facts are demonstrated and theory is reduced to practice by the Rule of Three and Simple Proportion. One of the opening paragraphs of Chapter VII., on "Warming," struck us as containing a novel doctrine, and one which, perhaps, is fairly open to question. It runs as follows:—"The best temperature for intellectual activity is from 62° to 65°, therefore these are the temperatures for living rooms; on the other hand, sleeping rooms are best kept much cooler; sleep is generally soundest when the air of the room is a few degrees above freezing point, always provided that the body itself is kept warm by sufficient wraps; it is a great mistake to

heat in any way sleeping rooms, that is, provided the sleepers are in good health." (Page 87.)

On page 107 we notice a slip on the author's part. Writing about the elementary properties of a circle, he states that "the relation of the circumference to the diameter is as 1 is to 3·1416." Of course, he intends to convey the converse of this.

The section on "Meteorology" is very brief but intelligible. On page 121 it is said that 323·571 inches of glycerine equal 30·3 inches of mercury in a Kew standard barometer. The former figure is an error for 325·871.

Section IV. is on "Water Supply." No mention is made of the Vartry Waterworks, of which Dublin is so justly proud, but we are told—and told truly—that "all students of sanitary science should be acquainted with the general features of the water supply of London." The analysis of water is well done in Chapter XIV. At page 159 we read of "a perfectly sterile gelatinous medi*a*," instead of "medi*um*."

In Section V., on "Drains, Sewers, and Sewage Disposal," a full account is given of the great sewerage system of London. Calculations of the discharge of sewage or water are described in Chapter XVIII. according to Eytelwein's and Kutter's formulæ. The section closes with a very clear account of the different plans in use for the disposal of sewage—namely, irrigation of land, chemical precipitation, electrolysis, dry conservancy, water carriage, the Shone, Lierner, and Berlier systems.

Section VI., on "Nuisances," is very well done, and includes an excellent description of offensive trades. It opens with Blackstone's definition of the word—namely, "Nuisance, *nucumentum*, or annoyance, signifies anything which worketh hurt, inconvenience, or damage." It is worth while to draw attention to a difference in the law relating to nuisances in England and in Ireland. In the 91st section of the English Public Health Act of 1875 the word "nuisance" is connected with the words "injurious to health" by the copulative "and." In the 107th section of the Public Health (Ireland) Act, 1878 (41 & 42 Vic., cap. 52), the alternative conjunction "or" was substituted for the copulative conjunction "and," at the instance, we believe, of the Dublin Sanitary Association. Thus the phrase runs, "a nuisance *or* injurious to health"—a much more comprehensive mode of expression, which would have rendered an appeal unnecessary in such a case as that of the Bishop Auckland Sanitary Authority *v.* the

Bishop Auckland Iron and Steel Company (L. J. R. 52, p. 38), quoted by Mr. Wynter Blyth (page 243). In this case complaint was made to Justices under the Public Health (England) Act, 1875, section 91, subsection 4, against the Iron Company in respect of an alleged nuisance occasioned by an accumulation of cinder refuse which gave off smoke and gas. The Justices found as a fact that the matter complained of was a nuisance, but was not injurious to health. But the superior Court held that, nevertheless, they ought not to have refused to convict, *as the nuisance was of a kind which might be injurious to health, and it was not necessary in such cases under the above provision to prove that it was in fact so.* The subclause in question in the Irish Act runs:—"Any accumulation or deposit which is a nuisance *or* injurious to health."

Under the heading "Slaughter-houses" no reference is made to Dr. Alfred Carpenter's researches on the apparent connection between localised outbreaks of scarlatina and the presence of decomposing slaughter-house refuse. The late Dr. T. H. Maunsell, of Dublin, confirmed Dr. Carpenter's conclusions by an analysis of the registry of deaths in No. 2 South Dublin City Registration District during nine years (1864 to 1872 inclusive).[a] Mr. Wynter Blyth does, however, observe that "probably blood putrefaction is liable to produce septic disease and puerperal fever." The following remarks meet with our heartiest approbation, and might well be conned and pondered by the Corporation of Dublin:—"It is hoped," writes Mr. Blyth, "the time is not far distant when private slaughter-houses in large population centres will be abolished. The public health cannot be protected, nor the sale of diseased animals controlled, except in abattoirs" (not "abbatoirs," as the word is wrongly spelled on page 263).

Section VII. is on Disinfection and Disinfectants. A true disinfectant is defined to be "a chemical substance which is capable of killing by its poisonous action a pathogenic, or disease-producing germ; it is, therefore, synonymous with 'germicide.'" Antiseptics, on the contrary, "are substances that arrest the development of germ-life." The former of these definitions seems to be wanting in accuracy, for surely dry heat, moist heat, and steam, can hardly be regarded as mere chemical substances. The term "poisonous" also is equivocal. It of course refers to the effect of the disinfectant on the micro-organism. Two temperature

[a] Vide Manual of Public Health for Ireland. Page 169. 1875. Dublin: Fannin & Co.

values given on page 313 are ambiguous, being presumably on the Centigrade scale, while numerous other thermometer readings in the same chapter are stated to be recorded by Fahrenheit's scale. Disinfection by heat is fully discussed in Chapter XXIII., and in a most interesting and scientific manner. Chemical disinfectants are described in Chapter XXIV., in which the ugly misprint "*prodigiosis*" for "*prodigiosus*" occurs on page 335.

Zymotic, or Micro-parasitic, Diseases form the subject of the eighth section, in which the author adopts the modern theory of micro-parasites and of "micro-strife" between the *macrophages*—or fighting cells of the mammalian body—and the *microbes* of disease. Paragraph 277, on "Acquired Immunity," is very amusing reading. The classification of micro-parasitic diseases adopted by the author is the following:—1. Eruptive Fevers. 2. Micro-parasitic Diseases affecting the Nervous System. 3. Micro-parasitic Diseases mainly attacking the respiratory passages. 4. Septicæmic maladies. 5. Tubercular Diseases. 6. Malaria. 7. Micro-parasitic maladies primarily affecting the intestine. Nearly 200 pages of the book are devoted to the consideration of these several groups in detail from the standpoint of Preventive Medicine.

One of the most valuable portions of this department of Mr. Blyth's work is that which gives the results of the investigation of the outbreak of smallpox in Sheffield in 1887–88 by Dr. Barry, one of the Inspectors of the Local Government Board for England. From his Report it may be laid down that the mortality of all ages and both sexes from smallpox in a vaccinated community will be under 5 per cent., whereas in an unvaccinated community it will be over 49 per cent. of those attacked. From the experience of the Sheffield epidemic also it is certain that the infection of smallpox can strike at a distance. Whether the contagious particles are conveyed by the air itself or by the household fly and other insects, the important fact remains that the infection may travel far and cross open spaces. The influence of the Sheffield Hospital in disseminating the poison of the disease could be distinctly traced for a circle of 4,000 feet. For instance, the following percentages of households attacked at successive distances from the hospital are given in Dr. Barry's Report to the Local Government Board:—

0—1000 feet.	1000—2000 feet.	2000—3000 feet.	3000—4000 feet.	Elsewhere.
1·75	·50	·14	·05	·02

Mr. Blyth well observes that "this possibility of smallpox spreading by aerial infection increases greatly both the hospital difficulty and that of individual isolation." (Page 370.)

As to the protective efficacy of re-vaccination at stated intervals Mr. Blyth speaks in no uncertain terms. "It seems indeed monstrous," he says, "that with this powerful agency at command there should be any necessity for spending sums of money on smallpox hospitals, when a complete and thorough compulsory re-vaccination of the community *would at once stamp it out.* Re-vaccination must be considered in the light of a test—if the vaccination should 'take,' it is a sign that the infection of smallpox would also 'take.'" (Page 374.)

The discussion of scarlet fever is most interesting. Some very valuable conclusions will be found at page 387, and the connection of the disease with the so-called *Hendon Disease* in milch cows is fully considered and illustrated.

Speaking of the ætiology of typhus, the author rightly holds that Murchison's doctrine that this disease may be produced *de novo* in the presence of destitution and overcrowding will not be accepted at the present day. Mr. Blyth is inclined to explain these puzzling cases of typhus which sometimes occur without manifest or traceable exposure to infection by suggesting that the micro-parasite of the disease—presuming such to exist—may under ordinary circumstances live as a saprophyte on vegetable and other organic matter. Another and even more likely explanation to our mind is that such cases arise from the development, at a given time and under favouring circumstances, of the resting spores of the micro-parasite of typhus into the fully-formed microbe.

The author correctly points out that the "striking distance" of typhus is very small, and so is in marked contrast to that of smallpox. By the way, in this paragraph (300) there are some bad misprints—"narower" and "areation." "The prevention of typhus is, in theory, of the simplest:—Given good ventilation and ample cubic space, typhus disappears" (page 405). Of this, the rapid subsidence of typhus-prevalence in Dublin of late years is a notable confirmation. Familiar as Dublin physicians have been with typhus in the past, a time may come when their successors may be guilty—through inexperience—of such errors of diagnosis as are mentioned by Mr. Blyth in his history of recent outbreaks of typhus in England. At Middlesborough, in 1886, the early cases in a sharp local epidemic seem to have been mistaken for

"scarlatina." In the same year, at Hartlepool, the first cases of another local outbreak were confused with "typhoid fever." In 1882–83, the victims of an outbreak of typhus at the Nazareth House, Hammersmith, were supposed to be suffering from "influenza"—cases occurring from October 22, 1882, until February 2, 1883, when at last the medical attendant suspected typhus fever! Such errors in diagnosis would be well-nigh impossible in Dublin at the present time.

An awkward misplacement of a line of type occurs at the beginning of Chapter XXVII., on Micro-parasitic Diseases affecting the Nervous System. The heading of paragragh 307 is "Rabies," and this is immediately followed by the sentence: "To this group belong rabies, tetanus, and whooping cough." Of course the author wrote this sentence first under the heading to the chapter, viz., "Micro-parasitic Diseases affecting the Nervous System." We are glad to find the view that tetanus is an infective (bacterial) disease unreservedly adopted by Mr. Blyth.

Chapter XXVIII., on the Micro-parasitic Origin of Pneumonia, is full of interest to the clinical physician as well as to the sanitarian. The evidence of the infectious character of this disease is drawn in considerable measure from the paper on "Pythogenic Pneumonia," by Drs. Grimshaw and J. W. Moore, which appeared in the number of this Journal for May, 1875 (Vol. LIX., No. 1, Third Series); but the author does not deign to mention or allude to this paper. This is the more curious, as four references to authorities are certainly directly quoted from the paper in question.

Chapter XXIX., on the Septicæmic Maladies, includes a full account of the most recent researches on the intimate nature of the poison of diphtheria. Even those by Dr. Klein, described in the Proceedings of the Royal Society for 1890, and in the Medical Officer's Report in the *Supplement to the Eighteenth Annual Report of the Local Government Board*, 1888–1890, are duly quoted.

Probably the longest chapter in the volume (XXX.) is devoted to the all-prevailing topic of Tuberculosis. It is described as "an infectious malady, caused by a micro-organism, to which has been given the name of the *Bacillus tuberculosis*. The bacillus, once planted in the tissues, may give rise to a mere local lesion, as, for instance, when it is inoculated into the skin; or may affect one particular organ, such as the lung, far more than any other part; or may be generally diffused" (page 444). Perhaps, fortunately

for Mr. Blyth, Koch had not announced his method of treatment for tuberculosis when this chapter was written.

This—the eighth section—also includes chapters on Typhoid Fever, Cholera (including "Diarrhœa—English Cholera").

Section IX., on "Isolation Hospitals," is brief but to the point. In Section X., on "Food and Diet," Mr. Blyth is quite at home. It is illustrated by a series of valuable tables of the percentage composition of classes of articles of food, such as animal flesh (or "meat"), fish, milk, cheese, and other dairy products, various flours and leguminous seeds, succulent vegetables and fruits. The "Duties of Sanitary Officers" are set forth in Section XI., in which a well-deserved compliment is paid to Dr. Tatham, Medical Officer of Health for Manchester, by quoting his weekly health return with approval, and recommending it to Health Officers as an example of what such a Report should be.

The work is fitly brought to a close in Section XII., on the "Inspection of Food"—a section which is worthy of the reputation of the author and the importance of its subject-matter.

2. In reading Dr. Rohé's handsome and well printed volume, it is impossible to help feeling disappointed that a nation so inventive and so productive of "notions," as our American cousins are, should not have devised more sanitary novelties. This probably results from sanitation having been taken up in England so many years before attention was directed to it in America, that most of the possible lines of invention were pretty well worked out at this side of the Atlantic. On the other hand, the author shows no jealousy of English work, although many names and inventions familiar to readers of English public health literature are unmentioned. Tobin, Teale, and Farr, for instance, are not named, and the respective principles of Tobin's tubes, of Sheringham's valves, and of Ellison's radiator ventilator, are not alluded to. Indeed the section on ventilation is very poor. A deeply sunk lower sash, which, when slightly raised, allows air to pass in between the sashes and also through holes opening vertically in the window sill, is the only ventilating device mentioned. Here the poorness of the Index may be alluded to; it is not only inadequate but inaccurate. General ventilation, ventilation of ships, of prisons, and of hospitals, are indexed, whilst ventilation of houses, the only illustrated section on ventilation, is not mentioned.

The chapter on Closets also is not up to date. Wash-out

closets are mentioned, and two American forms figured, but they are needlessly complicated, and the principle of the "after-flush" does not seem to be recognised, as it is said the delivery of water from the cistern should be "at first rapid to thoroughly wash out the closet and connections, and *then slow to re-establish the proper depth of seal in the trap.*"

With regard to water-supply, the Americans seem to be well off, as we read that in most American cities the supply is much greater than 50 gallons daily per head. The disposal of sewage is still far from what it should be, and what are termed "dumb-wells" in England seem to flourish in America under the name of "privy-wells." The idea is simple, but nasty, and is thus described :—

"In other cities the privy-well system is largely in use. This is—next to the midden or shallow pit just described—the most pernicious system for the disposal of excreta that can be imagined. The wells are dug to such a depth as to reach the subterranean flow of water, in which the excremental matters are carried off. Hence these receptacles never fill up, and never need cleaning. For this reason they are popular with property owners."

The English dumb-well cannot compete with its American cousin, as it only professes to get rid of its fluids, and requires the solids to be occasionally removed. In America everything passes to the underground source of "cool wells and sparkling springs!"

Classification of patients in America can hardly be very perfect, or the following paragraph would not have required penning:—
"The sick in a hospital should be properly classified. Male and female patients should, of course, be treated in separate wards. A primary classification into medical, surgical, and obstetric cases or wards is also indicated. Infectious diseases, such as typhoid fever, erysipelas, cholera, yellow fever, croupous pneumonia, &c., should not be treated in the same wards with rheumatism, Bright's disease, cardiac and nervous disorders, or simple digestive derangements."

It would seem to be enough to say, "infectious cases should be separated from non-infectious," and to leave the separation of the sexes to the good sense of the authorities.

One other point deserves hostile criticism. Earth-burial is preferred to cremation, not only on medico-legal grounds, but because the objections to earth-burial are considered frivolous. "Popular sanitary literature teems with supposed instances of the

injurious influence of cemeteries upon the health of persons living in their vicinity. An unprejudiced consideration of the subject shows, however, that there is no trustworthy evidence that any of the gases exhaled by decaying or putrefying bodies are injurious to health. . . . Where bodies are properly buried, and the ground is not overcharged by corpses, it is not probable that infectious diseases are propagated from interred bodies. There are no facts on record which show that such an event has occurred."

A careful study of Darwin on "Earthworms" would show the author that there are more things in earth, at any rate, than are dreamt of in his philosophy.

The following calculation is interesting, and even if it does not whitewash earth-burial it deals a heavy blow at cess-pits:—"Pettenkofer and Erismann have shown that a single large privy-vault, containing about 17 cubic metres of excrement, gives off nearly as large an amount of putrefactive gases in the course of one year as is exhaled by a burial-ground containing 556 decomposing corpses in ten years."

We have dealt chiefly with points in which the Text-book is defective; they are but few compared with those in which it is accurate, and Dr. Rohé may be congratulated on having produced a clear, readable text-book—somewhat wanting in detail, but a good introduction to more extended works.

3. Dr. Whitelegge's book is one of the well-known "Manuals for Students of Medicine" series, and quite keeps up the high standard of the earlier volumes. It would be hard to imagine a more concise, complete, and clear handbook than Dr. Whitelegge's, and it may be adopted as a safe guide even by those who are not within reach of a library, as the descriptions and directions, although expressed in the fewest possible words, are always easily understood and followed. In addition to the subjects usually dealt with in such manuals, there are good chapters on Sanitary Laws, Duties of Medical Officers of Health, and By-laws and Regulations. There is also a most excellent chapter on Vital Statistics, which gives in forty-two pages a wonderful amount of information, fully explaining the construction of the Life and other tables used in vital statistics, and their illustration by diagrams. The chapter on Meteorology is also well done.

4. The very title of the last book on our list—"Aids to Sanitary Science"—shows that it is meant only as a "crambook," con-

taining a number of facts arranged in a manner which makes them easily got up for examinations; still there are crambooks and crambooks, and the present is certainly of a favourable type. As a handbook for those attending lectures, or as a convenient help in rubbing up old information and learning what new things have been added, Dr. Allan's "Aids" will be found serviceable. The arrangement is clear and the index good, so that the whole makes a convenient *aide memoire*. It is not, however, a book to read. Single paragraphs contain a dozen names of inventors, patents, processes, &c., without a word of explanation—so that, without a lecturer's explanation or other and larger works to refer to, much in this volume would of necessity be useless.

Description of the Johns Hopkins Hospital. By JOHN S. BILLINGS, M.D. Baltimore. 1890. 4to. Pp. 116.

THIS sumptuous volume, beautifully printed and profusely illustrated with engravings and photographs, contains the history and detailed description of the great institution in Baltimore, due to private, non-posthumous munificence. It is to America that we must look for conspicuous contemporary examples of obedience to the practical precept of Mr. Carnegie's Gospel of Wealth, that benefactors should found their institutions and set them going in their own lifetime, not retain their grip on their wealth until death compels them to let go. In modern England the latter is the rule; and it is remarkable that the exceptions which will occur to the mind of every reader are gifts by foreigners.

Mr. Johns Hopkins, a member of the Society of Friends, having acquired great wealth, of which he believed himself to be only a steward, resolved to devote it to the foundation of a hospital, an orphanage, and a training school for nurses, and purchased for the purpose a site in Baltimore, occupying about fourteen acres. He then selected twelve trustees, to whom he conveyed the land; and on the 10th of March, 1873, he addressed to them a letter announcing the terms of the trust. They were to build a hospital which should, when completed, accommodate 400 patients—one which should, "in construction and arrangement, compare favourably with any other institution of like character in this country or in Europe." They were to devote a year to obtaining advice and assistance from the highest authorities at home and abroad, and to begin actual construction in the spring of 1874. The hospital finished,

an orphanage for three or four hundred coloured children is to be built, and for their maintenance £4,000 annually is allotted. In the current year, and in each subsequent year up to the completion of the hospital, £20,000 are placed at the disposal of the trustees. For the support of the hospital and the orphanage property valued at £400,000, yielding an annual revenue of £24,000, is allocated. Poverty and need for medical or surgical aid are to be the only qualifications for admission to the hospital, "without regard to sex, age, or colour." Provision for paying patients is also to be made. In connection with the hospital a training school for nurses is to be established, and in due season a convalescent hospital, outside the city, is to be provided. It is the donor's "especial request that the influence of religion should be felt in and impressed upon the whole management of the hospital; but I desire, nevertheless, that the administration of the charity shall be undisturbed by sectarian influence, discipline, and control." Finally, the trustees are to bear constantly in mind that the hospital is intended ultimately to form a part of the "medical school of that university for which I have made ample provision in my will."

To carry out the instructions which we have summarised above, the trustees consulted five physicians—Dr. Norton Folsom, of Boston; Dr. Stephen Smith, of New York; Dr. Caspar Morris, of Philadelphia; Dr. Joseph Jones, of New Orleans; and Dr. John S. Billings, of the U. S. Army. To these gentlemen a full description of the circumstances of the site is given, with the information that the £400,000 which, according to the donor's letter, was available, had, by subsequent additions, become £600,000, yielding an annual revenue of £36,000. They are informed also that Mr. Hopkins had, by his will, provided further more than £600,000 for the establishment of a university on a site which he had acquired, about a mile from the hospital, and that he expected the latter to aid in the medical education supplied by the former. It was suggested to them that "the subject most prominent at this day, in the professional consideration of the hospital question as applicable to cities, is the choice between the *pavilion* system, which admits of two or more stories in height permanently constructed, of which the Herbert Hospital in England and several in this country may be considered good modern types, and the *barracks* system of one-story structures, destructible in whole or in part, which were so successfully used in the late war, but of which no extensive and prominent example is now in operation."

On the 7th of May, 1889, the result of anxious inquiry and conscientious study was opened. Mr. Francis T. King, President of the Board of Trustees, delivered a short address, from which we learn that the hospital was completed without trenching on capital, and that by judicious investments the income had been increased by no less than £22,600. Dr. Billings, to whom we are indebted for this magnificent volume, followed. In his address he states thus the problems which the trustees had set themselves to solve :—

"To provide for the proper care of the sick, both rich and poor, to provide for the highest class of medical education, to increase and diffuse knowledge, to provide trained nurses for both hospital and city, to provide a dispensary, and to make buildings and grounds ornamental and attractive."

The final cause of a great modern hospital cannot be better formulated. Let us examine, in a few particulars, how the Johns Hopkins Hospital fulfils these requirements.

The extreme temperatures at Baltimore, occurring about once in 10 years, are 102° F. and −6° F. Heating and ventilating the hospital buildings, therefore, requires "apparatus which would be satisfactory in either Calcutta or St. Petersburg." The problem appears to have been satisfactorily solved. Heating is effected partly by water, partly by steam. "The entire system of hot-water heating contains about 175,000 gallons of water, and practical trial has shown that it produces an equable, agreeable temperature in all the buildings to which it is applied, and with the fullest ventilation desired." To avoid loss of heat in the pipe-tunnel and basements, the pipes are covered with felt, asbestos-paper, and, externally, stout painted canvas. Now, as to ventilation, it is provided that one cubic foot of air per patient per second shall be thrown into the wards, and that the supply can be doubled when it is considered desirable to flush out the rooms. In the private wards, each patient having a separate room, one and a half cubic foot is supplied; and in "isolating" wards, where offensive or otherwise noxious emanations are discharged, the air supply is increased to two cubic feet. Indeed, four cubic feet, capable of increase to eight, are thrown into three isolating rooms through perforations in the floor. In cold weather the air is warmed before entry. The velocity of the entering air-current is maintained, in ordinary circumstances, at one and a half foot per second. To test the effect of the ventilation, determinations of the proportion of carbon dioxide in the air of the ward have been made, but so far without positive results, the

proportion in the external atmosphere being found to vary considerably according to the direction of the wind and from other causes. It may be said, however, that the carbonic oxide due to respiration in the wards is about two parts in 10,000; and that excess of watery vapour and of other added impurities is removed as rapidly as it is excreted. As regards temperature, the air in the wards can be kept at 70° F. in the coldest weather. The water supply is derived from the city reservoir by a six-inch pipe. It is received in two iron filtering cylinders, six feet high, two feet in diameter, filled with clean sand. "At intervals of twenty-four hours the direction of the current through these filters is reversed, and the accumulated impurities are washed out into the street." This filtration is found to reduce the average number of micro-organisms in a cubic centimetre of the water from 39 to 6.

It should be added that provision is made for intercepting the water supply before it enters the filters for the service of steam fire-engines in case of fire.

As to the accommodation provided for patients in this fine hospital we can only give a few details. Two buildings are devoted to paying patients exclusively, who may. however, also be placed in the small rooms attached to the ordinary wards should circumstances render it desirable. Each of the two buildings is 130 feet by 49½ and two stories in height, with a cellar. On each floor a corridor runs longitudinally, north and south, terminating at either end upon an open but roofed verandah. From each side of the corridor the patients' rooms open, each 15½ feet long and 12 or 13 feet wide. The three main ordinary wards are each 99½ feet long, 27½ wide, and 15 high at the side walls, 16 in the clear at the centre; each intended to receive 24 beds. Each bed has 7½ feet of wall space, 107 square feet of floor, and 1,769 cubic feet of air space. There are no avoidable *corners*—the junction of ceiling with walls forming a quarter-circle, and also at walls and floors, a curved strip of hard wood taking the place of the ordinary wash-board.

We have reserved a surprise for the conclusion of our inadequate notice of this great institution and the great book which describes it. Baltimore—a city which had ten years ago a population of 214,037—"has no system of sewerage!"—

"From the majority of the houses the soiled water from kitchen-sinks, laundries, baths, etc., is allowed to run into the open gutters, while excreta are discharged into privy pits, wells, cesspools, or boxes. Some of these are comparatively water-tight, and are cleaned out at stated

intervals or when they become full and offensive; many of them allow of more or less leakage of their contents into the surrounding soil, while some are in the form of deep wells extending to the underlying gravel, and are seldom or never cleaned out. This last was the arrangement for the old Maryland Asylum for the Insane when it was upon the hospital grounds, and several such wells were found in the process of grading and laying soil drains." (P. 77.)

Thus the trustees had not a promising field in which to work for the drainage and sewerage of their hospital, and however astonished we may feel at the apathy of the municipal authorities of Baltimore, we cannot be surprised that the trustees were driven to adopt what they euphemistically term a "by no means ideal method of sewage disposal" "as a temporary measure until the city shall be provided with a proper system of sewers, which it is believed cannot be long delayed, and there is no reason to doubt that so far as the hospital itself is concerned it will dispose of its sewage for many years without danger to the health of its inmates or the production of nuisance." How? By discharging it into wells or cess-pits with porous bottoms! For example, the discharge from water-closets and sinks in the wards, the administration buildings, and other parts of the establishment, is conveyed by iron pipes to a well seven feet in diameter and seventy-one feet in depth. "At the bottom it enters a stratum of coarse gravel and pebbles through which water is constantly, though slowly, flowing." There may be special difficulties, of which we know nothing, about drainage in Baltimore, but it does seem to us extraordinary that the trustees and their advisers, with enormous pecuniary resources at their disposal, could devise no better means of getting rid of their sewage than by contaminating the subsoil of their city.

The Lord of Humanity; or, the Testimony of Human Consciousness. By F. J. Gant, F.R.C.S.; Senior Surgeon to the Royal Free Hospital. London: Hatchards. 1889.

There is a good deal of truth in the old saying, that when a man undertakes to devote himself to the study and practice of medicine, he must be content to fall into a back place with regard to the other branches of literature. To every rule there are exceptions. Several romances have recently been written by medical men. The book before us is another exception to the above-mentioned rule. It is a thoughtful essay, dealing with some of those subjects

which, in every age, have claimed the attention of philosophic minds—the conflict between good and evil, moral law, evolution in spiritual matters, &c. To discuss the many problems raised in its pages would be a task beyond the limits of the present review. We must, however, congratulate its author on having succeeded, amid the distractions of practice, in producing such a work.

Studies of Old Case-Books. By SIR JAMES PAGET, Bart. London: Longmans, Green, & Co. 1891.

STUDIES of Old Case-Books—selections, in fact, by the author from his own work—cannot fail to attract the deepest attention of the surgical profession, seeing that he is its leader in England.

Sir James Paget writes, as he speaks, with such elegance, and with such command of language, that, for this reason alone, one gladly opens his book. When we consider his great ability, his powers of observation, and his vast experience as a surgeon, we read his selections with the confidence that each will prove a useful lesson to even the oldest in our ranks.

The author, in his preface, tells us that "few things of the kind seem to be more useless than old case-books." He places his own in the category, without hesitation, looking on them as means of education of their writer only. If this be true, all the more highly should we prize his selections, made with guidance of his mature experience. It is difficult to select for detailed review from among the many subjects of the studies, for each chapter treats of a separate subject.

In the first, on Periostitis following Strains, which is shown to be, in so many instances, the result of athletic exercises, there are many facts quoted that would go to support the attack on these exercises one so often hears made in the present day. It is a satisfaction to those who would oppose this attack to find Sir James on their side. He says—

"So many of the injuries of which I have spoken occur in athletic sports, that I may be expected to write urgent protests, and even claims for some sort of legislation. I am not disposed to do anything of the kind. The advantages, both moral and muscular, of the free and self-managed games in our schools are immeasurably greater than the disadvantages of the occasional damages done in them. And the pleasures of nearly all sports, and the associated ambition for success in them, are augmented by a consciousness of some danger. In schools, ordinary

prudence on the part of masters playing with the boys or looking on, may suffice; especially if they are careful about those who are evidently weakly in their health. After school-life men must be trusted for self-care in sports."

We would especially commend to all whose practice concerns maladies of the spine Sir James Paget's chapters on Spines suspected of Deformities, and on Obscure Cases of Caries of the Spine. In these studies we find abundant teaching for old and young in the profession. Whether Sir James can teach the old, or not, is doubtful; but everyone who still looks on his position as that of a student will learn much from the quiet confidence with which the subject is put forward by the author—its difficulties clearly stated, and its tests examined.

Similarly, we would ask our over-confident and bumptious juniors to read with care the cautious words of Sir James on the Detection of Abscess. There is something charming in the simplicity of the opening words of this study:—

"I suppose that no one who has had much practice would deny that he has sometimes been mistaken in the diagnosis of abscess; has sometimes punctured swellings in the expectation of letting out pus, and has found none, and sometimes failed to find it where it certainly was. The generally accepted means for the diagnosis are many, and well known; they are told in all surgical text-books, and are often asked for in pass examinations; and yet in some cases they are all, whether singly or together, insufficient or misleading. I can remember more cases proving this than I can find notes of; but my notes tell two or three things which may be useful to any who can remember them, and may help them to be less frequently mistaken than I have been."

Our readers must look to the book itself for the details; but we cannot pass by the quotation without noting the modest confession of its author, and its strong contrast to the confidence of a clinical teacher we once heard claim for his *tactus eruditus* the power of distinguishing, not only the presence of suppuration in a tumour, but, further, the quality of the purulent matter—whether it was "thick or thin."

Sir James' chapter on Ununited Fracture in Children—rare as such a condition is, so rare that he has seen but three examples—possesses great interest, for it offers a problem for solution which some one may find. That it should be stated that such a condition can only be met by amputation is stimulus enough for the investigation of its details, rare though it be, and an attempt made to

solve its pathological difficulties. Among his studies of the Use of the Will for Health, Sir James gives a strange example of the indifference to pain of the uncultivated mind:—

"A lady in New Zealand gave a pair of leather boots to a naked-footed native boy. They were too narrow for his toes, and he at once, with a tomahawk, chopped a piece off the inner border of the end of each of his great toes, covered the wounded parts with some dry stuff that lay on the ground, put his feet back into the boots, and wore them till the wounds were healed."

We fear this case will shake the faith of many of our readers in Sir James's power of weighing evidence. He gives us no details further than we have quoted, and without further knowledge of the "Lady in New Zealand" we are slow to admit her story. But, while we refuse to give credence to this story without fuller evidence, we are not, therefore, to be supposed to doubt the judgment of our author in matters with which he has been himself conversant.

We close this short notice, heartily commending the work to the careful attention of all our readers.

A Text-Book of General Therapeutics. By W. HALE WHITE, M.D., F.R.C.P. With illustrations. Macmillan & Co. 1889. Pp. 371.

IN this volume Dr. White reproduces, with additions, the substance of his summer course of lectures on Therapeutics, delivered at Guy's Hospital. The book, however, is not so much a treatise on general therapeutics as a series of short essays upon certain subjects which do not fall under the heading of drugs.

The contents are heterogeneous and range over such topics as climatology, diet, baths, uses of water, of compressed air, and of "lavage," or washing out the stomach. Besides, we have chapters upon Massage, Weir Mitchell method, Venesection, Oertel's method of treatment for chronic Cardiac Disease, Electricity, Hypnotism, Metallotherapy, Treatment of Diseases of the Spinal Cord by Suspension, and, lastly, a few pages on the General Treatment of Acute Disease, Convalescence, and Insomnia.

It is manifest that within the compress of less than 400 pages we need not look for detailed exposition of so many and varied subjects, and some of the chapters are superficial and sketchy. Still we recognise a sensible practical tone throughout the book,

and it is one that may be read with profit. We may note the section on the dietetic treatment of lithiasis and gout as an example in point. Many will be interested in the chapters on Hypnotism, and will be inclined, we fancy, to agree with the author's sentiments expressed in the last sentence (p. 333) :—

"The whole subject of the therapeutical use of hypnotism is in its infancy. We must receive all reports of cases said to have been cured by it with the greatest caution, and probably future experience will show that many authors have exaggerated its value."

Transactions of the Medical and Chirurgical Faculty of the State of Maryland, at its Semi-Annual Session, held at Hagerstown, Maryland, November, 1889. Ninety-second Annual Session, held at Baltimore, Maryland, April, 1890. Baltimore: Griffin, Curley and Company. 1890.

Born soon after the War of Independence, the Medical and Chirurgical Faculty of Maryland is to-day one of the most prominent of the American Medical Societies in promoting Scientific Medicine. Every European Medical Society knows some of its members by repute, a distinction won by honourable and painstaking application to the investigation of the treatment of disease. Here, as in America, Julian J. Chisolm is known both as an expert and successful operator and a grateful and suggestive writer, and his contribution to the present volume of Transactions fully justifies his reputation.

Dr. Preston gives an interesting review of "Hypnotism," which, after long familiarity with the literature of the subject, we are bound to confess is the best historical summary on the subject we have as yet seen.

"The Early Detection of Pulmonary Consumption," by Dr. Wm. B. Carfield, is written in advocacy of the value of the microscope in diagnosis, and he gives a formula for the staining fluid he uses. Such a paper as this tells how far we are drifting from the old lines, and how necessary it is for the physician of to-day to be abreast of his work. Dr. Benjamin Allen is dead, and he has left no successor. The spectacles and large unread volume are not enough. Medicine to-day demands unceasing study, and requires of her followers unremitting attention to the problems of disease that daily present themselves. In Maryland, amongst physicians

and surgeons, industry and intelligence, if we may judge from the Transactions, go hand in hand, and the result is the production of an interesting and valuable work.

Medical Communications of the Massachusetts Medical Society. Vol. XV., No. 1, 1890. Boston, 1890. 8vo. Pp. 256.

This volume contains eight articles read before the Annual Meeting of the Society in June, 1890. It opens with the Annual Discourse, delivered by Dr. James C. White, of Boston. He chose for his subject the Relations of the Society to Medical Education; and his address gives us incidentally a more comprehensive view than we can usually command of the condition of medical education and the value of medical qualifications in the United States. We can look down into the deplorable depths in which some American "schools" and "colleges" and "universities" are wallowing; and we can appreciate the efforts which others are making to raise and maintain a standard worthy of a great people.

In the latter class the Johns Hopkins Hospital School, in Baltimore, stands high. In conjunction with the other schools of Maryland it has issued a circular, addressed to all medical schools in the United States, inviting a conference. Nothing can show more clearly the deficiencies of American medical education than an enumeration of the proposed improvements recommended for discussion. They are five:—Three years' course of six months' sessions; graded curriculum; written and oral examinations; preliminary examinations in English; and laboratory instruction in chemistry, histology, and pathology. A moderate programme, surely! We are not surprised to learn from Dr. White's address that the Harvard School has long since exceeded these moderate requirements; demanding as a minimum a three years' course of nine months each, with an option of another nine months' study. For admission to the school is required "a knowledge of Latin, physics, and of one of the following subjects:—French, German, algebra or geometry, and botany," in addition, of course, to English. Unfortunately, the Harvard leaven is but small in comparison with the lump. In the past five years only 335 medical degrees were conferred, and even at Harvard only 9 per cent. of the graduates had studied for more than three years.

Dr. George B. Shattuck, of Boston, delivered a lecture on

Influenza to the Society. The Massachusetts State Board of Health sent out circulars, on the outbreak of the epidemic, to "physicians, public institutions, and factories and employers throughout the State," asking for information on the subject. "From physicians 192 replies were received; from public institutions, 24; from factories and employers, 178." Some of the conclusions deduced from these replies are:—That, in Boston, influenza appeared in epidemic form in the middle of December, culminated between December 28th and January 4th, thenceforward declining; that at least 40 per cent. of the adult population of the State were so seriously affected as to be incapacitated for work; that exposure to atmospheric influences affected liability, men being generally more susceptible than women; but that "when men and women were equally confined within doors by their work, as in mills, the women were both more seriously and more numerously affected;" that pneumonia was undoubtedly more prevalent, all over the State, during the influenza epidemic; that it is almost hopeless to attempt to establish conformity of the mode of progression of the atmospheric disease-wave with meteorological conditions either in America or in Europe; and that "the epidemiologist will be quite as much perplexed if he seeks to explain all the phenomena by contagion."

In connection with the same subject—influenza—Dr. Arthur H. Harrington, of Danvers, read a paper on the relation of the epidemic to insanity. He collected 48 cases in which "an attack of the influenza was followed immediately, or in a short time, by the development of a psychosis." In 31 of these influenza was obviously only an exciting cause; in 17 no cause except influenza could be made out, but the author is of opinion that if the circumstances of these 17 cases were fully known it would be found that influenza alone is incapable of producing insanity. Thirty-three per cent. of the cases recovered—a proportion which Dr. Harrington contrasts with the 15 to 20 per cent. of recoveries in new cases in hospitals. The latter average was objected to in the subsequent discussion as too low.

There is a most valuable article upon an important but little studied subject—Mushrooms and Mushroom Poisoning—by Dr. Edward J. Forster, of Charlestown, mushrooms being defined as "fleshy fungi, having a stem and cap." We learn that the majority of the 1,218 British species are edible, or at least harmless—the poisonous species belonging to a single group, the Amanitas. The

well-known puff-ball (which, however, is not a mushroom) is delicious when fresh, sliced, and cooked with butter. Dr. Forster has collected from American medical journals, and tabulated, 44 cases of mushroom poisoning, of which 14 were fatal; and he gives also Mr. Palmer's 33 cases, with 21 deaths. He infers, from the similarity of the symptoms to those of poisoning by morphin, that the antidote is "atropia in full doses, one-third of a grain at a time." He asserts that the results of this treatment have been most successful. A *priori* therapeutics are always questionable, and in his table we observe only 7 cases in which atropin or belladonna was employed, and of these 4 were fatal. It is much to be regretted that so nutritious a food as mushrooms should be distrusted because some species are unwholesome or poisonous; and Dr. Forster's elaborate paper teaches us how to recognise the wholesome and the dangerous.

Notes on Pathology.—General Pathology. By J. R. WHITAKER, Senior Demonstrator of Anatomy, School of Medicine, Minto House, Edinburgh. Edinburgh: E. & S. Livingstone. 1890. Pp. 245.

IT would appear that it is exceedingly difficult at the present time to write a Student's Text-book of Pathology. On the one hand, those works which aim at some measure of completeness are generally so voluminous and expensive as to be beyond the average student's supply of time and funds; on the other hand, those smaller works, which are written professedly for students, generally state facts and theories so briefly as to render them almost unintelligible, and are often very incomplete. Dr. Whitaker's little book does not belong exactly to either of these classes. It is intended, as he states in his preface, to be merely a guide to the student in attending lectures or in reading any of the standard works on pathology—a means of pointing out to him the more important matters and keeping them prominently before his mind. Accordingly, it consists of definitions, short paragraphs, tables—in short, it might be looked upon as an ideal book of notes upon a course of pathology lectures.

We can best describe it by an example:—Colloid cancer occupies a page. There are three lines on the General Characters of the disease; the Structure then is briefly described; there is a list of the most common Sites of its Occurrence; Clinical Characters and

Degenerations each occupy a couple of lines. And so on in other instances. Thus, although a beginner would not learn much from this book, a student, who had already learned something about the subject, could in a few moments refresh his memory concerning the most important points connected with general pathology.

Dr. Whitaker expresses himself very clearly and intelligibly. We think the book fulfils admirably the object of its author.

On the Causes, Treatment, and Cure of Stammering. By A. G. Bernard, M.R.C.S., L.R.C.P. London: J. and A. Churchill. 1889.

This little work contains a method for the treatment and cure of stammering, and gives a description and explanation of its cause. The author had been an inveterate stammerer, and the rules that he lays down for the cure of the annoyance are those he followed in his own case with such marked benefit.

He impresses on his readers the necessity of the stammerer exercising patience, perseverance, and constant watchfulness in following his directions, and from a careful reading of them we think they are admirably suited to effect a cure, if the author's admonition is followed.

Flushing and Morbid Blushing: their Pathology and Treatment. By Harry Campbell, M.D., B.S. (Lond.) London: H. K. Lewis. 1890. 8vo. Pp. 270.

Dr. Campbell has devoted much time and spared no labour in order to make his monograph the standard text-book of the subject with which it deals. There is, however, a consideration must give us pause at the very outset, and that is—whether the importance, theoretical or practical, of the subject is at all in proportion to the time and labour which the author has expended in collating a vast mass of literature and clinical cases. As "flushing" and "morbid blushing" can hardly, by any stretch of imagination on the part of an impartial observer, be regarded as morbid entities, we fail to see where an associated "pathology" can be found; and as regards treatment, these phenomena being merely the evidences of vasomotor nerve disturbances in connection with various constitutional states, treatment directed specially and solely to them would be but a return to the worst empiricism of mediæval medi-

cine. Dr. Campbell has undoubtedly collected many interesting and instructive illustrations of the more transient phases of nervous manifestation, or "nerve-storm;" and, as throwing many side-lights on these obscure questions, the work will no doubt fill a gap in medical literature. The style in which the book is produced reflects the highest credit on author and publisher—type, paper, and binding leaving nothing to be desired—a compliment which cannot be paid to many medical works. But our first impression after reading the work has been strengthened by subsequent examinations, and we are forcibly reminded of the Prince's criticism of Falstaff's tavern bill—"But one half-pennyworth of bread to this intolerable deal of sack!"

Foods and Dietaries: a Manual of Clinical Dietetics. By R. W. BURNET, M.D., M.R.C.P.; Physician to the Great Northern Central Hospital, &c. London: Charles Griffin & Co. 1890. Pp. 196.

EVERY practitioner knows from experience how often the arrangement and regulation of the patient's diet become at once the most important and most difficult part of the management of the case. It is to help him in such emergencies as these that Dr. Burnet has written the book before us.

It is not a scientific treatise on foods—it is entirely clinical in its form and objects. Its mode of arrangement was suggested by the author's habit of writing out for his patients detailed directions as to their food and drink. The introduction treats of the normal gastro-intestinal digestive processes. After this we have articles on each of the more common and important diseases. At the beginning of each section reference is made to such symptoms and to such points in the pathology of the disease as serve to point out the *rationale* of the dietetic directions. Then follow detailed directions as to food and drink, the frequency of meals and their most suitable hours, the beverages to be allowed, and, in short, all the points which are included in a carefully-written dietary. In many cases lists of foods and drinks to be avoided are added. There are chapters on the feeding of massage cases, on alcohol, on prepared and predigested foods (containing directions as to making peptonised articles of diet), and on nutrient enemata. An appendix contains 82 selected recipes for sick-room cookery.

Dr. Burnet's work is carefully and well written, and we feel

confident that many practitioners will gain from it very valuable hints. We use the word "hints" advisedly; such are the individual tendencies, habits, likes, and dislikes of human beings, that it is impossible to adhere at all rigidly to any one dietary scheme for any disease. There are some diseases, as Sir W. Roberts remarks in his Address at the opening of the Session 1890–91 of the Manchester Medical Society, such as diabetes and gastric ulcer, which require a strict and special dietetic treatment; there are many others, however, in which the peculiarities of the patient must be considered quite as much as the nature of the disease. In these cases the patient's answers in reply to the questions with regard to any special article of diet—"Do you like it?" and "Does it agree with you?" will probably lead to much better results than will any rigid adherence to a dietary which on general grounds is deemed suitable for a particular case.

There are a few points in this book which we could wish to see altered. Dr. Burnet states that he has avoided the discussion of food and diet in health; and we think wisely so. In one case, however, we wish he had relaxed his rule—namely, with regard to the feeding of infants and children. There is no mention of nutrient suppositories, or of enemata of pounded raw meat and pancreas (Leube's). Above all, we are surprised not to find in the list of recipes any mention of the various preparations of raw meat—such as raw meat juice made with hydrochloric acid, pounded or scraped raw meat and port wine, and other preparations which are often of extreme use. We hope that the author will see his way to include these subjects in his next edition.

Dr. Burnet's directions are always clear and concise. They are characterised by common sense, and an avoidance of that faddiness concerning food now so common. We can recommend this book to medical men, and feel sure that they will gain many valuable hints by reference to its pages.

Observations on the Secretion of Bile in a Case of Biliary Fistula. By A. W. Mayo Robson, F.R.C.S. From the Proceedings of the Royal Society. Vol. 47. 1890.

In this paper are embodied some very interesting results and analyses obtained by Mr. Robson during the progress of two cases of fistula—one of the gall-bladder, the other a biliary fistula. Besides accurate measurements of the quantity excreted, numerous trials

were made with reputed *cholagogues—e.g.*, calomel, euonymin, podophyllin, iridin, &c. The following are some of the conclusions arrived at:—"The bile is probably chiefly excrementitious, and, like the urine, is constantly being formed and cast out." "Increase in body-weight and good health are quite compatible with the entire absence of bile from the intestines." The quantity was found to vary from 39¼ to 25½ ounces in the twenty-four hours, the average being 30 ounces, less 2½ ounces of fluid secreted by the gall-bladder. The excretion was found to go on constantly, more actively during the day than at night, and quite uninfluenced by changes of diet. "The pigment of fresh human bile is biliverdin"—an observation which has been confirmed by MacMunn in a case of cholecystotomy, and by others, including Haycraft and Scofield, who found the reducing agent in the mucus of the gall-bladder, contact with which produced bilirubin. The author also found that the cholagogues mentioned above "seem to rather diminish than increase the amount of bile excreted." A curious fact is associated with one of these cases. So long as the bile was discharged externally menstruation was suspended, but on its being again diverted into the intestine the function was re-established in a normal way.

A Handbook of the Theory and Practice of Medicine. By FREDERICK T. ROBERTS, M.D., B.Sc., F.R.C.P.; Professor of Materia Medica and Therapeutics, and of Clinical Medicine, at University College; Physician to University College Hospital; Physician to Brompton Hospital for Consumption and Diseases of the Chest; Examiner in Medicine at the University of London, and for the Conjoint Board; &c., &c. Eighth Edition. London: H. K. Lewis. 1890. 8vo. Pp. 1059.

OUR task in reference to this edition of Dr. Roberts' well-known handbook is easy. We have only to record the fact of its publication, and to state that the author has succeeded in bringing it well up to date by careful revision and judicious additions. The bulk of the volume, happily, has not materially increased, only 15 pages having been added to the 1044 of which the seventh edition consisted.

Among the important supplemental matter in the present issue are sections on acromegaly, Weil's disease, progressive pernicious anæmia, colitis, albumosuria, peptonuria, xerostomia, &c.

There are scarcely any ugly mispellings, but we notice one glaring exception—"empyæma" and "empyœma," instead of "empyema," errors which are quite unworthy of Dr. Roberts.

We have much pleasure in once more recommending this work as an excellent and reliable text-book on Practice of Medicine.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Vol. XI. Phædronus—Régent. Washington: Government Printing Office. 1890. 8vo. Pp. 1102.

THE eleventh volume of this stupendous work carries us down to the letter R., the last entry in it being a reference to Jean-Marie Régent's "Contribution à l'étude de la folie à deux ou folie communiquée" (Paris, 1886).

This volume includes 9,539 author-titles, representing 4,535 volumes and 8,908 pamphlets. It also includes 14,262 subject-titles of separate books and pamphlets, and 38,080 titles of articles in periodicals. In the forefront of the volume is a substantial addition—the fourth—to the alphabetical list of abbreviations of titles of medical periodicals employed in the compilation of the Index-Catalogue, and published in the seventh volume.

We have called the work a stupendous one, for the eleven volumes as yet published embrace 117,327 author-titles, representing 58,833 volumes and 101,910 pamphlets, as well as 121,681 subject-titles of separate books and pamphlets, and 374,852 titles of journal articles. Volume III., in addition, gave a reference to 4,335 portraits.

Dr. John S. Billings, Surgeon, U.S. Army, is again responsible for the editing of this volume. We once more heartily congratulate him on the success attending his literary labours.

The Elements of Ophthalmoscopic Diagnosis. By GEORGE A. BERRY, M.D., F.R.C.S.ED. Edinburgh and London: Young J. Pentland. 1891. Pp. 63.

THIS little book is intended for beginners who have mastered the initial technical difficulties in using the ophthalmoscope, and who have material for study at hand, consequently no drawings are given, and theoretical questions in connection with the use of the ophthalmoscope have been altogether omitted. The subject is dealt with in a very practical manner, and the exposition is clear

and free from ambiguity. Besides an introduction on the proper routine to be adopted in examining the eye, there are three chapters treating of the normal fundus, diseases of the back of the eye, and the transparent media respectively. We fully agree with the remark that the art of ophthalmoscopy consists quite as much, if not more, in diagnosticating the healthy fundus as in recognising departures from the normal condition. It has occurred to us over and over again to see slight physiological variations regarded as indications of disease by inexperienced ophthalmoscopists. While we congratulate the author on the manner in which he has acquitted himself of this work, we must candidly confess that we do not quite see the necessity for its appearance or the gap which it is supposed to fill. It does not, nor does it profess to, contain more than any of the good text-books on ophthalmology which are in the hands of students.

Differentiation in Rheumatic Diseases (so-called). By HUGH LANE, L.R.C.P., &c.; Hon. Medical Officer to the Royal United Hospital, Bath, and Hon. Physician to the Eastern Dispensary, Bath. London: J. & A. Churchill. 1890. Pp. 27.

EVERY medical man must constantly feel how unsatisfactory is the present nomenclature of chronic rheumatic affections. We therefore look upon Dr. Lane's pamphlet as a step in the right direction.

He divides this large and somewhat heterogeneous class into three sub-classes :—

Firstly: *Chronic Rheumatism*, properly so-called: "Cases in which the joints are painful but not swollen, or in which there is a neuralgia, or even arthralgia associated with myalgia, or apart from it, or in which the various fasciæ are affected, or in which there is a general neuralgic condition supervening on an attack of acute rheumatism."

Secondly: When an attack of acute rheumatism results in a chronic affection, with enlarged and deformed joints, the condition is called "*Chronic Rheumatic Arthritis.*"

The third division is carefully to be distinguished from both of these. "*Chronic Rheumatoid Arthritis*" embraces those cases in which, without any previous attack of acute rheumatism, the joints become distorted and crippled, being usually attacked in a centripetal order; there is generally anæmia; and the last stage is

osteo-arthritis. In these cases a strumous family history is generally present. The chief differences between the second and third classes—*i.e.*, between Rheumatic and Rheumatoid Arthritis—are given in a tabular form.

Dr. Lane's pamphlet is well worth reading.

The Transactions of the Pathological Society of London, comprising the Report of the Proceedings for the Session 1889–90. London: Smith, Elder, & Co. 1890.

The forty-first volume of the Transactions of the Pathological Society is, in every respect, quite up to the high standard which its predecessors had attained. The plates, many of which are beautifully coloured, are, we think, on the whole, almost the best which the Society has yet published.

Out of the numerous valuable papers which the volume contains, it is difficult to select any for special mention. We must, however, call attention to a few. Dr. Sheridan Delepine reports a case of right lateral homonomous hemianopsia, caused by softening of left cuneus. The paper is well illustrated. Two cases of lymphangioma of the tongue are described and illustrated—one by Mr. Barker, the other by Mr. Jonathan Hutchinson, jun. Dr. William Hunter contributes an important paper on the Pathology of Duodenitis. By experiments, for the details of which we must refer to the original, he proves that certain substances excreted in the bile can cause duodenal inflammation; and he believes that duodenal inflammation and ulceration after burns is caused in this way—viz., by the excretion of irritant products through the bile. There is an interesting paper by Mr. Frederic S. Eve on certain morbid conditions of the bones of ancient Egyptians who lived about 1,300 years B.C. There is a long and profusely illustrated paper by Mr. James Berry on the Pathology of Goître. Dr. S. Delepine contributes an important paper on Gregarinosis or Psorospermosis in Rabbits.

There are many other valuable papers, but we cannot call special attention to all that deserve it. The volume is a welcome addition to our books of reference on Pathology.

PART III.

MEDICAL MISCELLANY

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Samuel Gordon, M.D., F.R.C.P.I.
General Secretary—W. Thomson, M.D.

SECTION OF OBSTETRICS.

President—S. R. Mason, M.D., F.R.C.S.I.;
Sectional Secretary—Andrew J. Horne, F.R.C.P.I.

Friday, February 13, 1891.

The President in the Chair.

The late Dr. J. A. Byrne.

The following resolution of sympathy with the family of the late Dr. J. A. Byrne was passed *in silentio*:—

"Resolved,—That the Obstetric Section of the Royal Academy of Medicine desires to record its deep regret at the loss it has sustained by the recent death of Professor Byrne, and to express its sincere sympathy with his widow and family."

Par-Ovarian Dermoid Cyst.

Dr. More Madden exhibited a dermoid cyst, which he had removed seven days previously from a young unmarried woman at the Mater Misericordiæ Hospital. The patient—a very stout country woman—had been in fair health until a year before admission, when she first noticed a small swelling in the left hypogastric region. This increased in size rapidly, its development being accompanied by a continual, dull, wearying, abdominal pain, which subsequently became more and more troublesome, and was then frequently intensified by paroxysms of acute suffering, until she was thus compelled to seek admission into the hospital. On examination a firm globular intra-peritoneal tumour, then apparently as large as the fœtal head, and freely movable in every direction,

was discovered. On laying open the abdominal walls—which were coated by about three inches of fat—the tumour came at once into view, and was punctured with a Wells' trocar, giving exit to about four pints of thin, dark-coloured fluid, and thus enabling the withdrawal of the solid portion of the cyst through a very small abdominal wound. The pedicle was then ligatured, divided from its attachment, the peritoneal cavity washed out, and the wound closed in the ordinary way. Some hours subsequently obstinate and uncontrollable vomiting set in, her pulse rose to 150, and never fell below 140 to the time of her death—three days after the operation. On *post-mortem* examination, the wound was found fairly united, the peritoneal walls and intestines somewhat congested, but not sufficiently so to account for the result, which was probably largely due to the fact of the heart and kidneys being found very extensively affected by fatty degeneration.

The solid portion of the tumour, on examination by his colleague, Dr. M'Weeney, proved to be a dermoid cyst, containing hair, a plate of bone, and fatty matter.

Dr. Bagot said he would like to know why Dr. Madden designated his specimen par-ovarian dermoid cyst. As far as he could see, from a hasty examination of the specimen, the tubes of the par-ovarium were intact, and it appeared to him to be an ordinary dermoid cyst of the ovary. Unless Dr. Madden could give some reason for saying its origin was from the par-ovarium, he would still believe that it was a dermoid cyst of the ovary. As far as Dr. Bagot had read, there were but two observations of tumours which could be called par-ovarian dermoid cysts. These observations, which were by Dr. Lawson and Dr. Sänger, related to dermoid cysts, which could not be in any way traced to the ovary.

Exhibitions.

Dr. W. J. Smyly showed a uterus extirpated per vaginam for carcinoma of the cervix. The patient had made an uninterrupted recovery.

He also showed tubes and ovaries removed for chronic salpingo-oophoritis. The patient had been treated without benefit for three years, and was most anxious to be relieved by operation.

Dr. Bagot showed an ovarian cyst, which he had removed at the Rotunda Hospital from a young woman, aged twenty-two years. She had made a perfect recovery.

Massage as applied to the Treatment of Incontinence of Urine in Females.

Dr. Bagot read a paper on "Massage as applied to the Treatment of Incontinence of Urine in Females," in which he gave a full account of the treatment of this affection by the Brandt system, by Sänger's method, which consisted in dilatation of the vesical sphincter, and also

by massage, by distension of the bladder with warm water, as practised first by Nissen and Marion Sims, junior. He had cured three cases by the use of Brandt's system, omitting some of the steps which he considered useless. The most essential part of this method of treatment was the direct treatment of the neck of the bladder by the finger in the rectum or vagina. In children one used the finger in the rectum. In the first case, a woman, aged thirty years, married eight and a half years, had borne five children, a year and a half having elapsed since the birth of the last. She had suffered from incontinence of urine more or less since her last confinement, but had become much worse during the past nine months—her water passing from her whenever she walked about or made any sudden effort, such as coughing. She frequently passed her urine under her when asleep in bed. She was, in appearance, a fairly healthy, stout woman. Her bowels were constipated, moving only once or twice a week. Examination showed perineal laceration of the first degree, a rather patulous urethra, slight prolapse of the anterior vaginal wall, vagina and perinæum abnormally distensible, uterus and appendages normal; no abnormal tenderness or irritability of the bladder could be detected on passing a sound. The urine was normal. She was treated at first every day for four days by Brandt's system, omitting "the lifting" of the bladder. Her bowels were regulated, and she was told to wear woollen drawers, and try to control her sphincter whenever she felt her urine passing from her. After this she was treated sometimes every second, and sometimes every third day for twenty-nine days. At the end of this time a permanent cure was effected.

The second case, a young woman, aged twenty-four years, unmarried, well developed, in whom examination showed nothing abnormal except slight cervical catarrh, which was cured by the application of pyroligneous acid; had suffered since a child from nocturnal enuresis. Two years ago she had been treated by electricity every second day for six weeks, but unsuccessfully. She was treated by Brandt's method—omitting the "exercises for the adductors of the thighs" and "the bladder lifting"—every second day for five weeks, at the end of which she declared herself quite well, and was discharged.

The third case, a woman, aged forty years, married twenty years, ten children; no abortions; had always had easy labors. For the past three years her water would pass from her involuntarily when she walked about. The treatment in this case lasted four weeks; during the first week it was carried out regularly every day, and only the "bladder lifting" was omitted. Afterwards the treatment was performed every second or third day, and the tapotement of the lumbar and sacral region, as well as the exercises for the adductors of thighs, were also omitted.

Dr. Bagot's reasons for discarding the "bladder lifting" altogether was because, from what he had seen during laparotomies, he knew that it

would be impossible to seize hold of the bladder when in an empty state and elevate it by the manœuvre described by Brandt, and on the other hand, were the bladder full, or even partially filled, any one who has had any experience in abdominal palpation must recognise that such a procedure could not be carried out owing to the sensitiveness of that organ. Brandt and Boldt had reported numerous successes. Though Dr. Bagot had used tapotement of the lumbar and sacral regions in cases which he treated, he failed to see how it could be in any way beneficial, and, as he had long since given it up, as unnecessary in the manual treatment of uterine displacement, so, too, he would discard it also in the treatment of this affection for the future. The " exercises for the adductors " might be of use in those cases where the pelvic floor was greatly relaxed, and even in these, though it was probably of use in bracing up the parts, it was not an absolute essential in the cure of either enuresis or of uterine displacements. The chief part of this method as applied to enuresis was the direct treatment of the neck of the bladder.

The method of Sänger was one to which he wished especially to draw their attention. Dr. Sänger considered that the basis and cause of this affection consisted in a weakness or paresis of the bladder sphincter, and perhaps a certain tenuity of the muscular bundles. The centre for micturition, he says, must also be implicated, but in a negative direction. This method was not indicated where there was very great dilatation of the bladder neck and whole urethra. In those cases artificial narrowing of the urethra by some method, such as Schultze's or Pawlik's, &c, was more likely to succeed. Where the dilatation was not so great, Sänger advised that his method should be tried. Dr. Bagot had treated two patients by this method, and a cure resulted in both. One, a woman, aged forty years, who had suffered from partial incontinence of urine for the past five months, was cured after three weeks' treatment. The second case, a woman aged forty-three years ; married twenty years ; two children ; fifteen years since last pregnancy; had always suffered more or less from incontinence of urine since the birth of her first child, a difficult forceps delivery. Treatment lasted thirty-eight days, and resulted in a permanent cure. Massage by distension of the bladder with warm water was of use in case of contraction of the bladder following long-continued incontinence of urine from any cause, the holding capacity of the bladder being then much diminished. This condition was especially to be seen where fistula had existed or where patients had formerly suffered from severe cystitis of long standing. While recommending these treatments, Dr. Bagot urged the necessity of a careful diagnosis in every case. One should pay special attention to the examination of the urine, the condition of the bladder and urethral mucous membrane, and also examine all the other pelvic organs, and inquire carefully into all previous treatment, lest any traumatic lesion, such as too extensive dilatation of the urethra,

might be the cause of the affection. Fistula should also be borne in mind. The cystoscopic examination should be more generally used. Dr. Bagot used this method of examination in all cases of bladder trouble now. The cystoscope of Dr. Nitze he found to work most efficiently.

Dr. W. J. Smyly had not tried the method; but the malady was of such a distressing nature that a method which promised cure was to be greeted with satisfaction. He had seen excellent results from massage in uterine displacements.

Dr. More Madden felt bound, as a gynæcological practitioner and teacher, to express in the most distinct terms that he could employ without giving any offence to those from whose opinions he ventured to differ his most emphatic dissent from Dr. Bagot's views with respect to the use of massage in the treatment of incontinence of urine in females, as described in the paper just read. Apart from the many serious, and by no means merely medical, objections, to which the speaker referred at some length as being, in his opinion, almost inseparable from any procedure involving any frequent or prolonged manipulation whether within, or even in the immediate vicinity, of the female genital tract, as those just described as connected with the practice of what is now termed "massage," Dr. More Madden believed that the great majority of cases of incontinence of urine in females, when not resulting from parturient injuries or causes, resulted from cystitis; and he was strongly of opinion, from clinical experience, that such cases, as he had, he believed, elsewhere shown, might generally be more effectually and better treated by other and rapidly curative methods of treatment.

Mr. S. M. Thompson wished to ask whether, in a case of acute enuresis, Dr. Bagot would not first try all medical means before resorting to massage or dilatation of the bladder.

Mr. O'Callaghan said, in discussing the treatment of incontinence of urine in women—one of the most distressing complaints we meet with—we should take into consideration the cause of it. Whether it is due to a dilated or to a contracted bladder. He had found in these cases that, in the former class, the simple treatment of the cystitis cures the disease; in the latter—a rare disease, of which he had had two cases—he treated the lesion by gradual dilatation, injecting hot water; and he had been able to dilate a bladder, which would not hold half an ounce of urine, until it held twenty-four, thereby curing the disease. In these latter cases, he affirmed the bladder might be massaged until doomsday without cure.

Dr. Bagot, in reply, said Dr. Madden had mentioned rubbing or friction of the vagina. It was evident, from this remark, that Dr. Madden knew nothing about massage in gynæcology; for, in carrying it out, there was no rubbing or friction of the genitals by the fingers in the vagina; the internal hand did not move more than during an ordinary bimanual examination. Where stroking movements were used they were

performed by the external hand through the abdominal walls, the fingers in the vagina being held quite still, and being used simply to raise and support the parts while being massaged. In performing massage of the neck of the bladder the finger could be used in the rectum or vagina. Women, if they were really ill, came to doctors to be cured, with their minds made up to submit to pain or other unpleasantness in order to regain their health. Dr. Bagot's experience agreed with that of their President, Dr. Mason—that, if women had confidence in their medical attendant, and believed that he was doing what was for their good, they never made any objection to whatever form of treatment he would propose. He, Dr. Bagot, had mentioned that cystitis was a cause of incontinence, that Brandt and Sänger's methods were to be used only in primary incontinence, and that most accurate examination should be made, so as to exclude all other cases, lest any malapplication of these methods should be made. He had expressly mentioned that the urine was normal in all these cases that he had treated, and in the last two cases he had made a cystoscopic examination with the instrument of Dr. Nitze. He disagreed with the statement of Dr. Madden, that cystitis was always easily cured. That was contrary to the experience of every writer on the subject, except Dr. Madden. Some cases of cystitis proved most inveterate.

Concerning what Mr. Thompson had said about dilatation, Dr. Bagot said dilatation of the urethra, performed as he had described it, was simply a form of massage; it acted both directly on the muscles of the urethra and neck of the bladder as well as reflexly through the lumbar centre, stimulating it to contract. Dilatation, when used in cystitis, was practised with a different object—namely, to obtain drainage and rest of the bladder-wall by establishing a temporary incontinence. With a similar object, one frequently had recourse to colpo-cystotomy in severe cases of cystitis.

As to Mr. O'Callaghan's remarks on dilatation of the bladder with warm water, they were really only a reiteration of what Dr. Bagot himself had said. He had mentioned that it was an excellent treatment in suitable cases. But as to the cases which Mr. O'Callaghan had mentioned as having been treated by him with this method, they belonged to the class described under the term cystospasm. These were gradually being eliminated from the cases of primary incontinence since more accurate methods of examination had come into vogue; they were now generally found to depend on some local structural lesion, such as a fissure in the neck of the bladder, &c. The more dilatation of the urethra and cystoscopic examination were employed the more readily would cases of so-called primary cystospasm be recognised as purely secondary. Dr. Bagot had stated that Brandt and Sänger's methods were to be used in cases of primary incontinence. In cases of cystospasm, washing out the bladder or other local treatment of the primary cause was the rational

treatment. These cases were often due to chronic cystitis, hence the advantages obtained by washing out the bladder. Dr. Bagot had not said that he massaged the bladder. It was the treatment of the neck of the bladder that he considered as the essential part of Brandt's treatment, and this could always be massaged per vaginam, or per rectum, no matter how empty the bladder might be.

In conclusion, he had to thank Dr. Smyly, the Master of the Rotunda, and their President, Dr. Mason, for the way in which they had commented on his paper. He quite agreed with their remarks concerning massage in the treatment of diseases of the female pelvic organs, when rationally applied. He had himself once looked upon it with incredulity; but had long since been compelled to recognise its value.

The Section then adjourned.

SECTION OF PATHOLOGY.

President—E. H. Bennett, M.D.
Sectional Secretary—J. B. Story, F.R.C.S.I.

Friday, February 20, 1891.

The President in the Chair.

Specimen of Cystic Kidney.

Mr. Kendal Franks showed a specimen of a large kidney, weighing over two pounds, which was in a condition of advanced cystic degeneration. The kidney was removed by operation on January 13th, through a median abdominal incision, from the left side of a married woman, aged twenty-five; and it was specially remarkable in this, that the right kidney, which was examined through the abdominal wound at the time of operation, was apparently healthy. This is a rare condition. The diagnosis of renal tumour was made previous to operation, but its exact nature was not determined. The patient made an uninterrupted recovery. Mr. Franks discussed at some length the differences between isolated, though sometimes multiple, cysts of the kidney, and the conglomerate cysts of cystic degeneration.

Dr. M'Kee thought there was no essential difference between what Mr. Franks had called "isolated" cysts of the kidney and the "conglomerate" cysts of the specimen shown. Both were equally congenital, and the latter was formed by the confluence of single cysts. The cysts resulting from chronic nephritis were mostly microscopic in size, and never larger than a pea.

Dr. Alfred Smith reminded Mr. Kendal Franks that two cases of cystic degeneration of the kidneys were reported in this Section during the

past three years as having occurred in the fœtus at the Rotunda Hospital, and were fully reported in the Transactions. One was a large cystic variety due to a congenital stricture of the urethra; the other, shown by Dr. Bagot, was of the fine cystoid variety.

Mr. Patteson wished to ask Mr. Franks if any microscopical examination had been made of the case before the Section. Judging from the microscopical appearances the tumour clearly belonged to the congenital cystic variety. The condition of the urinary tract was not stated, and those cases which Virchow more especially described were conditions of dilatation of the uriniferous tubules due to congenital absence of the pelvis of the kidney or other analogous causes. The importance of careful microscopical examination is shown by a consideration of the views recently put forward by Mr. Shattuck, and confirmed by Mr. Bland Sutton, that the most probable explanation of these tumours is the persistence of part of the mesonephros or Wolffian body in conjunction with the remains of the metanephros.

Mr. Kendal Franks, in reply, said that it was generally admitted that in cases of cystic degeneration of the kidney the urinary passages are patent, and the condition can in no way be attributed to an obstructive cause. Virchow's view was that the condition originated *in utero* as an interstitial nephritis. The first case alluded to by Dr. Smith was evidently not an example of conglomerate cystic disease, but was a hydronephritic kidney, the result of congenital atresia of the urethra. He could not agree with Dr. M'Kee that isolated cystic disease and the conglomerate cysts were not distinct conditions. The isolated cysts are not congenital, but frequently may be traced to an injury, and one kidney is alone affected. Other differences might also be mentioned.

Exhibition of Cerebral Tumour.

Dr. E. H. Bennett exhibited a cerebral tumour occupying a large part of the motor area of the right cerebral hemisphere, including almost the entire arm centre, which had proved fatal by intracranial pressure, but without at any time paralysis of the left arm. The sections showed the size of the tumour to be about that of an half of a Tangerine orange, the base of the hemisphere being directed against the dura mater. The tumour lay enveloped in the cortical convoluted surface directly over the fissure of Sylvius. The microscopic examination was reserved until the more important facts relating to the site of the tumour had been demonstrated. It is probably a sarcoma.

Mr. Story had examined the eyes of the patient when in hospital, and found neither optic neuritis nor hemianopsia. Proptosis (or rather retraction of lids) was present on both sides, winking was infrequent, and the upper lids did not follow the downward movement of the globes. There was partial anæsthesia of corneæ and conjunctivæ, and loss of

conjunctival reflex. It was an interesting fact to observe these well-known signs of that remarkable disease, exophthalmic goitre, in an undoubtedly cerebral case, and it strengthened the modern view that this disease is of central origin.

Dr. M'Weeney gave the result of his experience of cerebral tumours examined *post mortem* during his tenure of office as Pathologist to the Mater Misericordiæ Hospital. He had carefully examined three cases. The first was of a syphilitic character, and consisted of small tumours in the motor area. The second was a very remarkable one of multiple tumour, in microscopic structure closely resembling a carcinoma—probably an endothelial carcinoma—affecting the occipital region, the cerebellum, and the anterior portion of both hemispheres. There was hemianopsia in this case. The third case was one of rapidly-growing round-cell sarcoma affecting the base of the brain, piercing the body of the sphenoid, and spreading anteriorly into the orbit along the right optic nerve, which it flattened, causing blindness of the corresponding eye. In all these cases there was optic neuritis, and in none were the motor symptoms at all well marked. He thought it would not be justifiable to upset our whole fabric of cerebral localisation on the strength of a remarkable case like the present admirably-reported one, which must be explicable, as it seemed to him, on one of two hypotheses—either the structure of the cortical area was not sufficiently altered by the tumour to destroy the function of the ganglion cells, or the function of the part was discharged by some other portion of the cerebrum—a fact not without precedent.

Dr. M. A. Boyd said:—The case of cerebral tumour under my care mentioned by Dr. M'Weeney was, like the President's case, a remarkable example of a considerable motor area of the brain being involved in a tumour without any motor symptoms whatever being present. The patient, as in Mr. Bennett's case, had some difficulty in walking, and complained constantly of pain in the head, and as a tumour was suspected, an ophthalmoscopic examination was made. Double optic neuritis and hemianopsia were found. These symptoms pointed to the occipital lobe as likely to be the situation of tumour. The patient ultimately died of convulsions and coma, and the *post mortem* showed five or six tumours present in the occipital lobes and cerebellum—the principal one in the former, and which proved to be on microscopic examination a sarcoma. In such a case as that brought forward by Mr. Bennett, it would be quite impossible to localise the situation of the tumour owing to the absence of motor or special paralysis. In my own case the only symptom of motor irritation present was pain in the left thumb and index finger, but no special paralysis anywhere.

Dr. R. G. Patteson said:—I am not quite certain whether Dr. Bennett had spoken of aphasia in the case he brought forward. Undoubtedly, in certain cases transposition of the speech centre occurred, and in such

cases observation had established the presence of an exaggerated development of the more complex muscular movements on the left side. As regards the non-occurrence of motor phenomena in connection with the presence of a tumour involving most of the motor area, it was possible to conceive, in the case at least of slowly-developing tumours, that a certain amount of accommodation could take place, either through already-established or new-formed channels, in the opposite side; and it is not, I think, an exaggerated view to attribute to centres of the higher level a power of associated action which is daily exemplified in the subsidiary centres of the spinal cord after separation from those of a higher order. In the case of more rapidly-developing tumours the explanation was of course more difficult.

Nasal Concretion and Rhinolith.

Dr. N. Falkiner exhibited, for Dr. T. E. Little, some fragments of a nasal concretion and rhinolith, which had been extruded from the back of the nasal cavity after a severe attack of sneezing, there having been for some time previously some slight trouble from an insignificant nasal discharge and occasional epistaxis. The fragments weighed only 3 grains, and are yellowish-white and soft. He referred to a similar communication by Drs. M'Weeney and Falkiner on page 345 of volume VII. of the Transactions of the Royal Academy of Medicine in Ireland, 1889.

Hydatid Cyst of the Pleura.

Dr. Duffey made a communication on this subject. [It will be found at page 281.]

SECTION OF SURGERY.

President—H. G. Croly, President of the Royal College of Surgeons in Ireland.

Sectional Secretary—Mr. W. Thornley Stoker.

Friday, February 27, 1891.

E. Stamer O'Grady, F.R.C.S.I., in the Chair.

Specimens.

Card specimens, shown by Mr. Kendal Franks, Mr. Conway Dwyer, and Mr. Thornley Stoker.

Living specimens, by Mr. Kendal Franks, Mr. F. A. Nixon, Mr. Lentaigne, and Mr. Tobin.

Professor Koch's Treatment of Tuberculosis.

Mr. Kendal Franks read a paper on the above subject. [It will be found at page 287.]

Mr. Tobin referred to the contradictory opinions formed as to the effects of the treatment under discussion. He gave it as his experience that, with the exception of one case of erythematous lupus, he had seen no benefit result from injections of Koch's lymph. He mentioned a case of lupus that ceased to react to maximal doses of the lymph when injected between the shoulders, and which gave both local and general reaction to a quarter of the same dose when injected into the affected part. Mr. Franks had referred to the prejudiced outcry against Koch's lymph; it seems to him (Mr. Tobin) that Mr. Franks' paper might be spoken of as a similar cry in the opposite direction.

Mr. Myles said Mr. Franks deserved their thanks for the care and attention he displayed in bringing the list of cases he described before the Section. He desired, however, to question some of the conclusions that have been drawn from the cases by Mr. Franks. He divided them into four classes, but he might have added a fifth class—viz., those who had died from the lymph, and he feared that, judging from the published results, this class would, like Pharaoh's lean kine, soon swallow up all the others. Mr. Myles gave details of three cases in which reaction had followed the injections, and in which there was no other evidence of tuberculosis. One was a case of congenital syphilis, the other was a round-celled sarcoma, and the third a lymphadenoma, and in consequence he vigorously traversed the asserted diagnostic value of the lymph. Mr. Myles further said it was possible to explain the characteristic reaction by the assumption that the local swellings were really not latent tubercle stimulated to increased activity, as generally asserted, but were really fresh centres of infection produced as a result of the injection and consequent upon the increased activity of the primary focus caused by the infection. This hypothesis was supported by Virchow's *post mortem* examination, in which there was undoubted evidence of the development of fresh centres of tubercle. Mr. Myles also thought that the case of hip excision was hardly a fair case to place to the credit of the lymph, as the free drainage, &c., was quite sufficient to explain the improvement. He was glad also to see that Mr. Franks supported what he had urged previously—viz., the advisability of operating before injection.

Mr. Lentaigne thought that Mr. Franks' careful paper was most interesting. His own experience was that surgical aid should always be brought in whenever possible to complete the cure if such could be obtained after the injection treatment had been carried out. He now operated on every case that could be operated on, after a short course of injections. He had found that the tubercular glands removed were nearly all entirely caseated, and not partially caseated as had been the case with glands removed before treated by injection. He thought the treatment was tedious, but undoubtedly useful in many cases, and further

time would be required to establish its merits and demerits. He had always been of opinion, ever since the introduction of the Koch treatment, that surgical interference would be required in most cases after treatment by injection.

Mr. M'Ardle said that the fact of a case not responding to the inoculation must not be taken as a proof that the fluid is a test unless the parts be submitted to subsequent examination.

Mr. Kendal Franks, in reply, assured Mr. Tobin that the outcry against Koch's method, which he had described as thoughtless and prejudiced, applied only to those who declaimed against it, both in the medical journals and the daily press, without having any experience or knowledge of the method whatsoever. Honest criticism from those who had tried would help them in arriving at a just conclusion on the matter. The three cases quoted by Mr. Myles—one of syphilis, one of sarcoma, and one of lymphadenoma, which had reacted to the injection—could not be taken as evidence that the fluid was not of diagnostic value, for it was not shown that the patients were not the subject of some local tuberculosis in addition to their other affections. He admitted that many of the cases reported might have got well without the lymph, but they had been treated by injection in order to test its efficacy; but some of the cases would not have recovered otherwise. He instanced the case of a girl, aged ten, who had suffered from caries of the spine for four and a half years, with a psoas abscess which had been opened two and a half years ago, and who for over two years had suffered from persistent hectic—the evening temperature ranging between 101° and 103°. No treatment had been of avail, and the child was emaciated. He looked upon the case as hopeless, but tried Koch's method at the mother's request. Since the treatment had ceased, one sinus had healed up, the child had improved much in health, and the hectic fever had entirely disappeared. Such cases showed that the best results might be expected in some cases by the use of Koch's method.

COCAÏN AND ANTIPYRIN IN OBSTINATE VOMITING.

E. Steever, M.D. (*Medical News*, Philadelphia, Sept. 6, 1890), uses with success a mixture of cocaïn and antipyrin in the treatment of obstinate vomiting. His standard dose for an adult is—Cocaïn, gr. $\frac{1}{8}$; antipyrin, gr. 1; in aqueous solution, every half hour or hour, as required.

EYE-STRAIN AND HEADACHE.

Dr. George M. Gould writes (*Medical News*, Philadelphia, Aug. 23, 1890):—"In my first series of one thousand refraction cases, in private practice, a chief complaint in more than eight hundred was of headache. The failures to cure, or greatly relieve, were not over half a dozen."

CORK MEDICAL AND SURGICAL ASSOCIATION.

Cystic Enchondroma of Parotid Region.

Dr. Moriarty exhibited a small tumour, which he removed from the parotid region. On microscopic examination it proved to be a cystic enchondroma.

Blood Cast of Uterus.

Dr. Moriarty also exhibited a blood cast of the interior of the uterus, from a patient who had ceased to menstruate three months previously. An early abortion was suspected, but no trace of ovum could be found in clot.

Submucous Fibroid of Uterus.

Dr. Cotter (for Dr. Hobart) exhibited a submucous fibroid of uterus, removed by wire ecraseur. The tumour was about the size of a large orange, was examined microscopally, and proved to be a fibro-myoma.

Enlarged Bursa Patellæ.

Dr. Cotter exhibited a chronically enlarged bursa patellæ, removed by excision. The tumour was pear-shaped, the walls of the sac were much thickened and indurated, and the contents were purulent. A discussion ensued on the various methods of treatment of chronic bursitis, in which several members spoke. Antiseptic incision and drainage was the operative method advocated by the majority of those who took part in the discussion.

MASSAGE.

M. W. Zemblinoff (*Vracht*), from two years' experience of the good results of massage in inflammations of the parotid and mammary glands, recommends the treatment as one capable of preventing suppuration. If massage is painful he recommends the patient to be chloroformed. [Massage for inflammations is one of the oldest of treatments. In the old romance of "Reynard the Fox," Isegrin, the wolf, is "wryned" to relieve the inflammation of his skull.]

ŒSOPHAGEAL STRICTURE.

At a meeting of the Académe de Médecine on the 14th of October, 1890, M. J. A. Fort reported the successful treatment by electrolysis of an œsophageal stricture, caused by swallowing a corrosive fluid, in a girl ten years old.—*L'Union Médicale*, No. 123.

THE OUT-PATIENTS' DEPARTMENT OF GENERAL HOSPITALS AS A FIELD FOR CLINICAL TEACHING.

Being an Address delivered before the Annual Meeting of the Dublin Branch of the British Medical Association, January, 1891.[a] By Walter G. Smith, M.D., President of the Branch.

It has occurred to me that I might not unprofitably ask your attention to the subject of the value of the out-patients' department of our general hospitals as a field for clinical teaching, and to the importance of cultivating it more systematically.

I am convinced that among ourselves the work of the extern department does not always meet with the degree of recognition to which it is entitled. Much improvement has doubtless taken place, and in some hospitals, where the accommodation is far from satisfactory, good and useful work is carried out. But is it not too often the case that the extern work is slurred over or neglected. Nominally undertaken by the medical and surgical staff of the hospital, it is, I believe, not unfrequently left to the house surgeon, resident pupil, or whoever can be got to do it, and at any hour, or no hour. Perfunctorily and hastily rushed through, without regard to punctuality or regularity, or to the interests of the poor, the results are seen in the small attendance of patients, and in the indifference of the students to the opportunities it affords.

If the work is worth doing at all, it is worth doing well, and I strongly maintain that, in the best interests of general hospitals, the extern department should be regularly organised, properly officered, decently housed, and efficiently worked. If the senior members of the staff, as is likely to be the case in large hospitals, have their hands full, then let the extern teaching be handed over to assistant physicians and surgeons. No better training than this for the higher posts of clinical physician or surgeon.

Wherever pains have been taken, and careful instruction given in extern work, a rich harvest has been gathered. The poor willingly come, even from considerable distances, if they are sure to meet with the advice which they seek. The students soon discover that the hospital dispensary can be made attractive to them, and speedily find out that it fitly supplements the instruction they receive in the wards, and offers them special advantages which they otherwise miss.

It should, of course, be understood that the dispensary work need not clash with the appointed hours for clinical teaching, nor do I at all advocate that students should be tempted to forsake the wards for the

[a] Part of the Address is omitted.

dispensary, which at best must occupy a subordinate and secondary position.

As to the value of the experience gained in the out-patients' room, if I may speak for myself, I can truly say that much of what proved of the greatest use in after life was acquired by early practice in observation and teaching in the extern room. In no other way, and in so short a time, can acquaintance be made of the innumerable little things, a knowledge of which is so essential to real success in practice.

It is scarcely necessary to emphasise the contrast that obtains between the teaching in the wards and in the out-room. In the one, a rapid survey of a great number of the most diverse affections, medical and surgical, the oral demonstrations given on the spur of the moment, and requiring some versatility and quickness on the part of the teacher, if he is to succeed in fixing the attention of the class. Systematic and thorough teaching of the lessons of even one case is, from the nature of things, scarcely possible in many instances. In the other, the deliberate and detailed examination of one or a few cases, presented to the student from various points of view, and when occasion requires, carefully considered previously by the physician or surgeon before he develops his views upon an obscure case to the expectant and critical crowd that cluster around the bed.

Let me now briefly pass in review some of the advantages and opportunities that attach themselves to out-patient work. In the first place, the student is confronted with a great variety and number of cases. It is then easy to train him to note and distinguish numerous instances of slight anatomical and physiological variations, and so to avoid mistaking them for pathological appearances.

As Mr. Teale has put it, every hour spent in the out-patients' room will bring before the student's mind innumerable points of anatomical or physiological interest, which give life and reality to his other work, and teach him that he is dealing with living human beings. Again, he will see, and soon familiarise himself with a vast number of minor ailments and injuries, medical and surgical, which he will seldom meet with in the wards. Yet, as practice is made up more of little things than big things, he will all the time be learning many a lesson which he will afterwards find redound to his own credit and his patient's benefit.

In the dispensary, too, better than is possible by observation of patients in bed, the student can be instructed in the interesting data to be derived from the physiognomy of disease—*i.e.*, in an appreciation of those alterations in appearance, gait, manner, &c., of the patient, which are associated with various diseases of internal organs. In short, a habit of rapid but accurate observation and analysis can be inculcated—that habit which, after long practice, confers upon its possessor what Professor Gairdner has so happily termed, "an instinct of divination"—"a power akin to the artist, incommunicable by words." Very often a glance at a patient will

suggest the probable existence of acute disease—the student is directed to take the temperature. Many a case of continued fever is early detected, the patient is sent into hospital, and thus saved from himself and from the consequences of neglect.

Slight laryngeal complaints are common in out-practice. Here is ample opportunity for instruction in the use of the laryngoscope, and in the indispensable aid which it gives in diagnosis. The student cannot be too strongly urged to avail himself of every possible opportunity that occurs to him in this field. Laryngoscopy is not a very easy art, and a practical acquaintance with its methods will be more readily acquired by the pupil than by the practitioner who has had no previous training.

Cases, again, are frequent which afford material for a teacher to illustrate and explain the elementary methods of examining the eyes, and the student will be prepared to enter with greater interest into the specialised teaching of an ophthalmic hospital.

With regard to children's diseases much may be learned. The knack of examining a young child, and gaining the maximum information without frightening it, by the use of gentle and appropriate means, is one that cannot be too soon acquired. Whooping-cough, rickets, diarrhœa, and the effects of ill feeding and of bad hygiene, will present themselves over and over again, and furnish instructive topics for remark.

Every now and then a puny little object will be brought by its mother for treatment on account of sores about its mouth or anus, or for a vivid red, glazed, and sharply-defined erythema on its lower extremities. A glance suffices to make the diagnosis of hereditary syphilis. Such cases, in young infants, are seldom to be seen in the wards of the hospital; yet their prompt diagnosis is of the first importance, and moreover, one of the most gratifying lessons in therapeutics is to watch the striking, and often marvellous, improvement which the administration of a few grains of mercury can effect in such cases.

The subject of syphilis reminds me of a branch of study which can be easily and successfully taught in out-practice. Except in special hospitals—which fortunately do not exist in Dublin—such teaching, if done at all, will be mainly carried out in the extern room. I mean the study of dermatology. The time has gone by when students can afford to ignore it, or teachers to sneer at it, and a glance over the published Transactions of the Medical Societies, both here and abroad, will show what a considerable share of the proceedings it contributes, and how many of the best minds in the profession busy themselves with its problems.

In Dublin some steps have been taken to wipe away the reproach that no teaching in dermatology was forthcoming, and at several of the hospitals careful instruction is weekly given in this important branch.

In London, at each of the clinical hospitals, a member of the staff takes charge of the skin department, and some excellent work has issued from the hands of these gentlemen. Yet in Germany, so recently as 1888, von Ziemssen, in a clinical lecture upon scarlatina, takes occasion to lament the deficiency of clinical instruction in dermatology in the German "Hochschulen."

Diseases of the skin can never be learned from books, but must be studied from life, and no atlas can supply the place of clinical experience. The study of skin diseases, as von Ziemssen observes, is of great theoretic and practical interest. Let us all then use every chance of seeing and studying skin diseases. The trouble spent is amply repaid in practice by greater certainty of diagnosis, and better success in treatment.

Mr. Hutchinson has often insisted on the important place in medical education which dermatology is fitted to take. Nowhere else can be learned "so much and with such definiteness as regards the nature of disease, its remote and immediate causes, and the methods of cure. What is learned here is also of the utmost use in application to the diseases of other parts."

Turning from the educational aspect, the hospital dispensary is worth cultivating from two other points of view. If properly supervised, it will yield a supply of important cases for admission to the medical and surgical wards. The material for clinical teaching is consequently enriched, and the diagnosis—perhaps hurriedly made in the dispensary—can be confirmed or corrected at leisure. Again, efficient conduct of the extern work will be found to raise the esteem of the public for the institution, and will assist in drawing funds for its support. A person, for example, who sends a servant to the hospital, and finds that the patient has been carefully examined and kindly treated, will surely be favourably impressed, and if not already a governor or subscriber may require little inducement to become one.

Now as to the method of conducting the out-patient practice. This must vary in different places and with different teachers. A chief point is to endeavour to awaken and maintain the interest of the students of the class, and by short running commentaries to illustrate the varied cases that successively present themselves. So far as is possible all new cases of importance or rarity should, in the first instance, be handed over to the members of the class for examination and report—the easy cases to the junior students, the more difficult ones to the senior students. An instructive few minutes can be spent in a brief and friendly criticism of the various diagnoses which have been made, oversights pointed out, and practical hints on diagnosis and treatment given. An excellent plan is to group together similar or contrasted cases.

If there be not a day set apart for diseases of the skin, it will be found that in the course of a general dispensary a sufficient number of cases of

skin disease will usually present themselves each morning to furnish good material for clinical demonstration. For this purpose these cases may be reserved until the other patients have been attended to, and the cutaneous group can then be more conveniently studied. It is also useful to write down on a blackboard a list of the principal and more interesting cases that occur in the morning's work. The students are invited to copy this list with a view to refer to their books afterwards, and so to refresh and fix in their memories what they have seen and heard before the fleeting impressions fade from their minds.

In order to help in this and in other ways, and to assist in taking notes of interesting cases, or in keeping a register of cases of diseases of the skin, there will be no difficulty in finding a senior student willing to act as extern clinical clerk.

In conclusion, I have only to repeat that I am sure the work of the extern department is sometimes undervalued. I believe that it offers a valuable adjunct to the teaching in the wards, and that both senior and junior students will always gladly avail themselves of it wherever it is carried out with care and regularity.

RESPECT FOR SCIENCE IN RUSSIA.

A St. Petersburg correspondent of the *Journal de Médecine* tells the following tale:—"An extraordinary affair at Odessa has come to my knowledge. There is in the city in question an Institute of Bacteriology, founded and maintained in the municipality. The director is a Dr. Bardach, a pupil of Pasteur, who superintends the vaccination of cattle against anthrax and Siberian plague, after the method of Pasteur. The Russian Imperial Government sent circulars to all the landed proprietors of the south of Russia requiring them to have their cattle vaccinated, and the brothers Pankvatjeff, two millionaires, accordingly sent for Dr. Bardach the other day to come to their estates in order to vaccinate their cattle. Unfortunately the doctor made some mistake in the vaccine virus, and in two days there died 3,552 sheep, 1,200 horned cattle, and some hundreds of horses. Their owners brought an action against the Bacteriological Institute—that is to say, against the city of Odessa—and demanded damages. The case was tried a few days ago. The counsel for the city stigmatised the brothers Pankvatjeff as persons knowing nothing of scientific matters, and stated that he was at a loss how to characterise 'persons who dared attack the great and celebrated *savant* Pasteur.' In short, he pleaded so effectually that not only did the brothers Pankvatjeff fail to obtain a verdict, but the tribunal condemned them to pay, in common, a fine of 3,500 francs, as well as the costs of the trial, *pour leur apprendre à mieux estimer la science.*"

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F. R. Met. Soc.; Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, February 28, 1891.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	Feb. 7.	Feb. 14.	Feb. 21.	Feb. 28.		Feb. 7.	Feb. 14.	Feb. 21.	Feb. 28.
Armagh -	20·7	10·3	5·2	15·5	Limerick -	21·6	10·8	32·4	18·9
Belfast -	32·2	27·8	30·0	27·5	Lisburn -	38·7	4·8	24·2	29·0
Cork -	16·9	33·1	24·0	27·3	Londonderry	17·8	30·3	21·4	32·1
Drogheda	33·8	25·4	29·6	21·1	Lurgan -	20·5	5·1	10·3	46·2
Dublin -	26·3	26·0	26·6	28·8	Newry -	28·1	28·1	21·1	21·1
Dundalk -	30·6	52·4	4·4	26·2	Sligo -	19·2	14·4	33·7	9·6
Galway -	33·6	10·1	13·4	13·4	Waterford -	25·5	48·6	32·4	13·9
Kilkenny	29·6	8·5	38·1	21·1	Wexford -	8·6	12·8	25·7	21·4

In the week ending Saturday, February 7, 1891, the mortality in twenty-eight large English towns, including London (in which the rate was 19·0), was equal to an average annual death-rate of 19·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·9 per 1,000. In Glasgow the rate was 25·3, and in Edinburgh it was 19·8.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 26·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in Limerick, Londonderry, Galway, Drogheda, Dundalk, and Sligo, to 15·5 in Armagh. The 4 deaths from all causes registered in the last-named district comprise 3 from whooping-cough. Among the 145

deaths from all causes registered in Belfast are 1 from typhus, 2 from whooping-cough, 6 from enteric fever, and 2 from diarrhœa. The 26 deaths in Cork comprise 1 from diphtheria, 1 from enteric fever, and 1 from diarrhœa; and the 11 deaths in Waterford comprise 3 from whooping-cough.

In the Dublin Registration District the registered births amounted to 210—108 boys and 102 girls; and the registered deaths to 180—70 males and 110 females.

The deaths, which are 53 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 26·6 in every 1,000 of the estimated population. Omitting the deaths (numbering 2) of persons admitted into public institutions from localities outside the district, the rate was 26·3 per 1,000. During the first five weeks of the current year the death-rate averaged 34·1, and was 0·5 under the mean rate in the corresponding period of the ten years 1881–1890.

Fifteen deaths from zymotic diseases were registered, being 1 over the number for the preceding week, but 13 under the average for the fifth week of the last ten years. They comprise 1 from scarlet fever (scarlatina), 2 from whooping-cough, 1 from diphtheria, 3 from enteric fever, and 1 from erysipelas.

Twelve cases of enteric fever were admitted to hospital, being 2 over the number of admissions for the preceding week. Thirteen enteric fever patients were discharged, and 51 remained under treatment on Saturday, being 1 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 4 cases of measles and 2 of scarlatina. No typhus cases were received. Ten cases of measles, 5 of scarlatina, and 4 of typhus remained under treatment in hospital on Saturday.

There has been a further decline in the mortality from diseases of the respiratory system, the number of deaths from these causes, which in the three preceding weeks had been 102, 83, and 55, respectively, having fallen to 49, or 15 below the average for the corresponding week of the last ten years. The 49 deaths comprise 33 from bronchitis and 9 from pneumonia or inflammation of the lungs.

In the week ending Saturday, February 14, the mortality in twenty-eight large English towns, including London (in which the rate was 19·4), was equal to an average annual death-rate of 19·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·4 per 1,000. In Glasgow the rate was 26·6 and in Edinburgh it was 21·1.

The average annual death-rate in the sixteen principal town districts of Ireland was 26·0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·8 per 1,000, the rates varying from 0·0 in seven of the districts to 5·2 in Armagh—1 of the 2 deaths from all causes registered in that district having been caused by whooping-cough. Among the 125 deaths from all causes registered in Belfast are 1 from scarlatina, 1 from whooping-cough, 2 from diphtheria, 1 from simple continued fever, 8 from enteric fever, and 8 from diarrhœa. The Registrar of Belfast, No. 1 District, states—"Seven cases of small-pox have appeared in the city, three of which were in this district; no deaths from this disease have been reported up to the present."

In the Dublin Registration District the registered births amounted to 164—88 boys and 76 girls; and the registered deaths to 182—90 males and 92 females.

The deaths, which are 40 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 26·9 in every 1,000 of the estimated population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 26·0 per 1,000. During the first six weeks of the current year the death-rate averaged 32·9, and was 0·6 under the mean rate in the corresponding period of the ten years 1881-1890.

Only 7 deaths from zymotic diseases were registered, being 18 below the average for the corresponding week of the last ten years, and 8 under the number for the week ended February 7. They comprise 1 from diphtheria and 2 from enteric fever.

Only 7 cases of enteric fever were admitted to hospital, being a decline of 5 as compared with the number for the preceding week. Ten enteric fever patients were discharged, and 48 remained under treatment on Saturday, being 3 under the number in hospital on Saturday, February 7.

The hospital admissions include, also, 4 cases of measles and 1 of scarlatina. Seven cases of the former and 6 of the latter disease remained under treatment in hospital on Saturday.

No cases of typhus have been admitted to hospital during the last fortnight; the 4 cases of the disease in hospital on Saturday, February 7, remained under treatment at the close of this week.

Fifty-two deaths from diseases of the respiratory system were registered, being 3 over the number for the preceding week, but 4 under the average for the sixth week of the last ten years. They comprise 32 from bronchitis and 12 from pneumonia or inflammation of the lungs.

In the week ending Saturday, February 21, the mortality in twenty-eight large English towns, including London (in which the rate was 20·4), was equal to an average annual death-rate of 21·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·6

per 1,000. In Glasgow the rate was 28·6, but in Edinburgh it was only 16·4.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 26·7 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·1 per 1,000, the rates varying from 0·0 in nine of the districts to 4·8 in Sligo and Lisburn—the 7 deaths in Sligo comprising 1 from diarrhœa, which disease caused also one of five deaths in Lisburn. Among the 135 deaths from all causes registered in Belfast are 4 from whooping-cough, 5 from enteric fever and 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 204—107 boys and 97 girls; and the registered deaths to 185—82 males and 103 females.

The deaths, which are 40 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 27·3 in every 1,000 of the estimated population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 26·6 per 1,000. During the first seven weeks of the current year the death-rate averaged 32·1, and was 1·4 under the mean rate in the corresponding period of the ten years 1881–1890.

Eleven deaths from zymotic diseases were registered, being 4 over the exceptionally low number for the preceding week, but 14 under the average for the seventh week of the last ten years. They comprise 2 from whooping-cough, 1 from diphtheria, and 1 from erysipelas. No deaths from any of the three forms of continued fever—typhus, enteric, or simple-continued—were recorded.

Eight cases of enteric fever were admitted to hospital, being 1 in excess of the admissions for the preceding week, but 4 under the number for the week ended February 7. One enteric fever patient was discharged, and 55 remained under treatment on Saturday, being 7 over the number in hospital at the close of the preceding week.

Four cases of measles and 3 of scarlatina were admitted to hospital. Five cases of the former and 7 of the latter disease remained under treatment in hospital at the end of the week.

No cases of typhus have been admitted to hospital during the last three weeks; there was but 1 case of the disease in hospital on Saturday.

Deaths from diseases of the respiratory system, which had risen from 49 for the week ended February 7 to 52 for the following week, fell to 39, or 21 below the average for the corresponding week of the last ten years. The 39 deaths comprise 24 from bronchitis and 7 from pneumonia or inflammation of the lungs.

In the week ending Saturday, February 28, the mortality in twenty-eight large English towns, including London (in which the rate was 23·7), was equal to an average annual death-rate of 24·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 23·8 per 1,000. In Glasgow the rate was 27·8 and in Edinburgh it was 24·5.

The average annual death-rate in the sixteen principal town districts of Ireland was 26·7 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·7 per 1,000, the rates varying from 0·0 in eleven of the districts to 5·2 in Armagh—the 3 deaths from all causes registered in that district comprising 1 from whooping-cough. Among the 124 deaths from all causes registered in Belfast are 1 from scarlatina, 4 from whooping-cough, 2 from diphtheria, 5 from enteric fever, and 3 from diarrhœa. The 42 deaths in Cork comprise 2 from whooping-cough and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 253—114 boys and 139 girls; and the registered deaths to 199—84 males and 115 females.

The deaths, which are 18 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 29·4 in every 1,000 of the estimated population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 28·8 per 1,000. During the first eight weeks of the current year the death-rate averaged 31·8, and was 1·5 under the mean rate in the corresponding period of the ten years 1881–1890.

Twelve deaths from zymotic diseases were registered, being 1 over the low number for the preceding week, but 12 under the average for the eighth week of the last ten years. They comprise 1 from whooping-cough, 1 from diphtheria, 3 from enteric fever, and 4 from diarrhœa.

Nine cases of enteric fever were admitted to hospital, being 1 over the number of admissions for the preceding week. Four enteric fever patients were discharged, 1 died, and 59 remained under treatment on Saturday, being 4 over the number in hospital at the close of the preceding week.

Three cases of typhus were admitted to hospital; they are the only cases of the disease received during the last four weeks. Four cases of typhus remained under treatment in hospital on Saturday.

The hospital admissions for the week include, also, 5 cases of measles. Nine cases of this disease remained under treatment in hospital at the close of the week.

Fifty-four deaths from diseases of the respiratory system were registered, being 15 in excess of the number for the preceding week, but 3

under the average for the eighth week of the last ten years. They comprise 37 from bronchitis, 8 from pneumonia or inflammation of the lungs, and 2 from croup.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of February, 1891.

Mean Height of Barometer,	30·398 inches.
Maximal Height of Barometer (on 5th, at 9 a.m.),	30·725 „
Minimal Height of Barometer (on 26th, at 3 p.m.),	29·824 „
Mean Dry-bulb Temperature,	43·6°.
Mean Wet-bulb Temperature,	41·2°.
Mean Dew-point Temperature,	38·4°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·233 inch.
Mean Humidity,	83·0 per cent.
Highest Temperature in Shade (on 23rd)	61·9°.
Lowest Temperature in Shade (on 9th),	30·1°.
Lowest Temperature on Grass (Radiation) (on 9th),	25·5°.
Mean Amount of Cloud,	55·2 per cent.
Rainfall (on 2 days),	·042 inch.
Greatest Daily Rainfall (on 13th),	·024 inch.
General Directions of Wind,	W., S.W., calm.

Remarks.

February, 1891, proved a record month for drought, mildness, calm, and fogginess combined. Day after day and week after week an anticyclone lay over Central Europe and the southern half of the British Islands, whereas conditions were cyclonic both in Northern Europe and in the Mediterranean Basin. Calms and fog, or light variable winds prevailed in the anticyclonic area, where also the weather was almost rainless from beginning to end of the month. The S.W. wind on the western edge of the high pressure system raised the temperature in Ireland, but it was low in the S.E. of England owing to calm and fog. Towards the close the diurnal range of temperature in Central England became extraordinary, in consequence of the dispersal of the fog, the dryness of the air, and the absence of cloud by day and night.

In Dublin the mean temperature (44·7°) was 1·9° above the average (42·8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 43·6°. In the twenty-five years ending with 1889, February was coldest in 1873 (M. T. = 37·9°), and warmest in 1869 (M. T. = 46·7°). In 1886 the M. T. was 39·7°. In the year 1879 (the cold year) it was 40·1°. In 1888 it was as low as 38·6°, in 1889 it was 40·3°, and in 1890 it was 41·5°.

The mean height of the barometer was 30·398 inches, or 0·543 inch

above the average value for February—namely, 29·855 inches. The mercury rose to 30·725 inches at 9 a.m. of the 5th, and fell to 29·824 inches at 3 p.m. of the 26th. The observed range of atmospherical pressure was, therefore, 0·901 inch—that is, a little over nine-tenths of an inch.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 43·6°, or 4·1° above the value for January, 1891. Using the formula, *Mean Temp.* = *Min.* + (*max.*—*min.* × ·50), the M. T. becomes 44·7°, compared with a twenty-five years' average of 42·8°. On the 23rd the thermometer in the screen rose to 61·9°—wind, S.; on the 9th the temperature fell to 30·1°—wind, W.S.W. The minimum on the grass was 25·5° on the 9th.

The rainfall was only ·042 inch, distributed over 2 days. The average rainfall for February in the twenty-five years, 1865–89, inclusive, was 2·150 inches, and the average number of rainy days was 17·2. The rainfall and the rainy days, therefore, were both considerably below the average. In 1883 the rainfall in February was large—3·752 inches on 17 days; in 1879, also, 3·706 inches fell on 23 days. On the other hand, in 1873, only ·925 of an inch was measured on but 8 days; in 1890, only ·802 of an inch fell on but 7 days; and in 1887, only ·541 of an inch fell on 11 days. The rainfall in 1887 was much the smallest recorded in February for very many years. But the present record is probably unparalleled—·042 inch on 2 days. The nearest approach to this drought was in September, 1865, when only ·056 of an inch of rain was measured on but 3 days. There was no snow, sleet, or hail in Dublin.

The atmosphere was foggy on as many as 16 days, namely—the 4th, 5th, 8th, 9th, 13th, 14th, 15th, 16th, 18th, 20th, 23rd, 24th, 25th, 26th, 27th, and 28th. Notwithstanding the prevalence of fog, the amount of cloud—55·2 per cent.—fell far short of the average—66 per cent. High winds were noted on 8 days, reaching the force of a gale on only one day—the 11th.

The temperature exceeded 50° in the screen on as many as 14 days, compared with only 5 days in January, and with only 2 days in February, 1890; while it fell to or below 32° in the screen on only 2 days, compared with 7 days in January, and with 5 in February, 1890. The minima on the grass were 32°, or less, on 17 nights, compared with 21 nights in January, and 18 nights in February, 1890. On no day did the thermometer fail to rise above 40° in the screen.

Very open, favourable weather prevailed throughout the first week (1st–7th) especially in the east of Ireland. After Sunday, the 1st, an anticyclone, with barometrical readings as high as 30·70 inches or upwards, was found lying over France, St. George's and the English Channels. As the sky was densely clouded within the central area of this high pressure system, radiation was checked, and hence little or no frost was

felt at the majority of British and Irish stations—the exceptions were in the extreme S.E. of England on Monday morning and central Ireland on Thursday morning. On Monday and Tuesday the S.W. wind blew strongly at times, but later on there was a calm, accompanied by some fog, and finally light to moderate S.W. winds prevailed, with very cloudy skies and open, but dry weather. In Dublin the mean height of the barometer was 30·542 inches, or as much as ·802 inch above the mean pressure during the preceding week, and pressure reached 30·725 inches at 9 a.m. of Thursday (wind, W. by N.). The mean temperature was 46·2°; the mean dry bulb temperature at 9 a.m. and 9 p.m. was 46·1°. There was practically no measurable rainfall, only ·002 inch being caught in the gauge as the result of a slight shower early on the morning of the 8th. The prevailing direction of the wind was S.W.

An area of high pressure was found lying over Ireland, England, France, and Western Germany throughout the second week, while depressions of great depth travelled eastwards across the North of Europe, and more shallow depressions existed over Southern Europe and the Mediterranean. Consequently, the weather was favourable in Ireland, rough and unsettled in Scandinavia, changeable in the Mediterranean Basin. On Wednesday, the 11th, the wind freshened to gale force from W. even in the east of Ireland, but otherwise light winds and calms prevailed. At 8 a.m. of Thursday the barometer was as low as 28·76 inches at Stockholm, which station was then close to the centre of a very perfect cyclone. Ireland lay quite outside the influence of this disturbance, the N.W. gales of which brought intense cold to the Swedish stations, the temperature recorded at 8 a.m. of Friday being −12° at Haparanda, +8° at Stockholm, and +10° at Hernösand. In Dublin the mean height of the barometer during the week was 30·409 inches. The corrected mean temperature was 42·4°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 41·2°. The screened thermometers fell to 30·1° on Monday, the 9th. The rainfall amounted to ·027 inch only, of which ·024 inch was measured on Friday, the 13th.

During the third week conditions remained anticyclonic in our neighbourhood until Saturday, when evidence of the approach of a low pressure system to the S.W. of Ireland manifested itself in a steady fall of the barometer, the overcasting of the sky with cirriform cloud, and a freshening S.S.E. wind. Throughout the week a large area of high pressure (anticyclone) spread across Central Europe from Ireland to Poland, Hungary, and the south of Russia. Within the sphere of its influence, quiet, cold, foggy weather prevailed, and it was almost rainless. Across northern Europe, however, some large depressions travelled eastwards and conditions were unsettled. Over the Mediterranean, also, areas of relatively low pressure existed, keeping the weather more or less disturbed. Very dense fogs prevailed on Wednesday and Thursday

in England and Holland, and on the former day also in the E. and N.E. of Ireland. So great was the influence of the fog on the temperature in London that the maximum on Thursday was only 37°, whereas the thermometer rose to 59° at Nairn in the north of Scotland. In Dublin the mean height of the barometer was 30·475 inches. The corrected mean temperature was 42·6°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 40·8°. The prevailing winds were light from southerly points—between S.W. and S.E. The sun had considerable power by day. Rain fell on the early morning of Sunday, the 22nd, to the amount of ·010 inch.

The weather of the fourth week was remarkable in many respects—in England for the prevalence of dense fogs, and an extraordinarily large diurnal range of temperature—at Loughborough the thermometer ranged from 20° to 57° in the 24 hours ending at 8 a.m. of Thursday, and at Cambridge the thermometer fell from 67° on Friday to 25° during the ensuing night—a range of 42° F.; in Ireland for a wave of extreme warmth and dryness of the atmosphere on Monday, and for the passage of a barometrical depression across the country on Wednesday and Thursday without one drop of rain, except at Belmullet. An anticyclonic system hung over Germany throughout the week, and a warm southerly wind skirting the western edge of this system in tangent fashion produced an extraordinary rise of temperature in parts of Ireland on Monday and Tuesday. In Dublin on Monday evening, the 23rd, puffs of warm air were felt from time to time, which raised the temperature to 61·9° at 7 15 p.m. So desiccated was the air at the same time that the wet bulb thermometer read only 47·9°, and the relative humidity fell to 40 per cent. At Mullaghmore, Co. Sligo, the temperature reached 63° next day, while the maximum in London (where dense fog prevailed) was only 39°. At Nairn, in the N.E. of Scotland the thermometer rose to 64° on this day (Tuesday). On Saturday a strong S.W. to W. wind sprang up, and light showers fell towards evening. In Dublin the mean pressure was 30·166 inches—the barometer falling to 29·824 inches at 3 p.m. of Thursday (wind S.E., light). The corrected mean temperature was 47·5°; the mean dry bulb temperature at 9 a.m. and 9 p.m. was 46·2°. The screened thermometers rose to 61·9° on Monday and fell to 33·9° on Saturday. Rain fell on this last-named day to the amount of only ·003 inch. The wind was either calm, or southerly (S.E. to S.W.).

In Dublin, the rainfall up to February 28, 1891, has amounted to ·714 inch on 16 days, compared with a twenty-five years' (1865-1889) average of 4·350 inches on 34·5 days.

At Knockdolian, Greystones, Co. Wicklow, 1·275 inches of rain fell in January, on 15 days; and only ·120 inch in February on *only one day*, the 21st. At Cloneevin, Killiney, Co. Dublin, only ·470 inch fell on 11 days in January and only ·030 inch on 2 days in February.

PERISCOPE.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH—PARKIN BEQUEST.

In terms of the bequest made to the Royal College of Physicians of Edinburgh by the late Dr. John Parkin, Fellow of the College, a prize is offered for the best essay—"On the Curative Effects of Carbonic Acid Gas, or other forms of Carbon in Cholera, the different forms of Fever, and other Diseases." The prize is of the value of one hundred pounds sterling, and is open to competitors of all nations. Essays intended for competition, which must be written in the English language, will be received by the Secretary, G. A. Gibson, M.D., not later than December 31st, 1892. Each essay must bear a motto, and be accompanied by a sealed envelope bearing the same motto outside and the author's name inside. The successful candidate must publish his essay at his own expense, and present a printed copy of it to the College within the space of three months after the adjudication of the prize.

GHEEL.

In the Journal of the *American Medical Association* (Sept. 27th, 1890) we find an account of the Gheel treatment of the insane, in Dr. Curdy's Presidential Address to the Ohio State Medical Society. Perhaps because Gheel was first founded by an Irish lady, St. Dympna (whose tomb is still venerated there), the Irish treatment of the insane, at a time when the treatment was uniformly barbarous everywhere, is selected for description: and we are told that "the Irish practice had been to tie ropes around their arms and fasten them to carts, and compel them to walk the whole distance to the asylums; and so great was the resistance and savagely secure the tying, that one arm in five had to be amputated from the mutilation that resulted, and when they reached these places all who could pay were compelled to do so!" At Gheel, Dr. Curdy informs us, about one-third of the 3,000 houses receive insane patients as boarders; and of the 12,000 inhabitants 1,700 are insane. A board of commissioners, with a permanent executive committee, controls the management of the lunatics. Mechanical restraint is used as little as possible; but in the "good old times" the treatment appears to have been as brutal as it was everywhere else; and a medical visitor reported in 1803 that it was "even more cruel than that of negroes he had seen in South America." So late as 1851 a patient was seen in the streets of Gheel "with his waist encircled with an iron belt, to which his hands were secured by wristlets; and in the suburbs and among the farms several were fettered with iron, the chains between the ankles being eight inches long," and

having in some cases produced bad ulcers. Only in 1856 were abuses of this kind suppressed by Dr. Bulckens. Of the patients now in Gheel 1,400 are paupers, sent thither and paid for by their communes. These persons are compelled to work, and the condition of most of them is described as wretched. There are about 328 private patients, paying from 44s. to 6s. 6d. a week. There can be no attempt at cure, the medical staff being numerically insufficient even for effective supervision. "Beer is freely sold to all, and the only injunction is that they must not drink 'too much;' and the beerseller, who tries to make the most out of his business, is the one who determines the limit."

MASSACHUSETTS GENERAL HOSPITAL, BOSTON.

The Warren Triennial Prize was founded by the late Dr. J. Mason Warren in memory of his father, and his will provides that the accumulated interest of the fund shall be awarded every three years to the best dissertation, considered worthy of a premium, on some subject in Physiology, Surgery, or Pathological Anatomy; the arbitrators being the Physicians and Surgeons of the Massachusetts General Hospital. The subject for competition for the year 1892 is on some special subject in Physiology, Surgery, or Pathology. Dissertations must be legibly written, and must be suitably bound so as to be easily handled. The name of the writer must be enclosed in a sealed envelope, on which must be written a motto corresponding with one on the accompanying dissertation. Any clue given by the dissertation, or any action on the part of the writer which reveals his name before the award of the prize, will disqualify him from receiving the same. The amount of the prize for the year 1892 will be $500. In case no dissertation is considered sufficiently meritorious, no award will be made. A high value will be placed on original work. Communications should be addressed to Dr. J. W. Pratt, Resident Physician, Massachusetts General Hospital, Boston, U. S. A.

EPISTAXIS.

Dr. W. W. Parker, of Richmond, Va., states (*Medical Record*, Oct. 4th, 1890) that he has employed the following simple method for controlling epistaxis for thirty years without failure in any case:—"The little device which I use is made of fifteen of the long threads of patent lint, size three and one-half or four inches long, which I double on themselves and tie in the middle, and let one end of the string be six or eight inches long so as to pull the plug out when necessary. When doubled on itself it looks like a 'comet' in miniature with a nucleus and thirty tails (or twice the number of threads used). A probe, or soft piece of pine but little bigger than a match, is pressed up against the centre, and it is passed back upon the floor of the nasal cavity and pushed on till you

reach the posterior nares. This will be known both by the resistance and the length of the probe, or the depth which you have reached. Then slowly withdraw the probe and plug the anterior nares and you have arrested the bleeding. These twenty or thirty ends floating in the blood at once coagulate it. The passage of the soft lint gives no pain whatever. In persuading children to submit to the operation, I often pass the lint up my own nose to satisfy them it gives no pain. If lint is not at hand I use the largest size spool cotton."

OVARIAN CYSTS.

At a meeting of the Association Française pour l'Avancement des Sciences, M. Rebone, of Marseilles, stated that torsion of the pedicle of an ovarian cyst may be recognised by the sudden prominence of the tumour in the side and bottom of the belly; a distinct *bruit;* movement of the tumour as a whole, and a certain undulation of the mass synchronous with the pulse.—*La France Médicale.*

SUCCESSFUL SPLENECTOMY.

Professor Tizzoni (1890), of Bologna, on the 13th of July, 1891, successfully removed a spleen, which weighed two pounds and measured eleven inches.

EXCISION OF THE ELBOW.

Professor Tirifahy, Brussels, reports the case of a boy, sixteen years old, from whom, some months previously, he had excised the elbow. Disease of the humerus required that the joint should again be opened, which, being done, exhibited a well-grown sigmoid notch and olecranon, evidently caused by the saved periosteal tissue when the subperiosteal section was made of the ulna.—*La Presse Médicale*, No. 29, 1890.

HYSTERICAL APHONIA.

J. A. Bach, M.D., gives (*Medical News*, Philadelphia, Sept. 13th, 1890) the following description of the appearance of the larynx in hysterical aphonia:—The cords are nearly a normal colour. If a strong effort at intonation be made by the patient, the cords quickly approximate, but as quickly recede, so that voice is not produced, although apparently the effort of the patient is continued.

CEREBRAL LOCALISATION.

Thomas Manley, M.D., reports a case (*Medical News*, Philadelphia, October 4th, 1890) of fractured skull in a boy, which confirms Dr. Ferrier's assertion that "the occipito-anterior region is the visual area of the cortex."

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Novel Granular Effervescent Preparations.

Messrs. Curtis and Company, of 48 Baker-street, London, W., have introduced three novel granular effervescent preparations, which appear to us to merit approval and to supply a therapeutical and pharmaceutical want. They are—granular effervescing citrate of caffein, 3 grains in each drachm; granular effervescing antipyrin, containing 8 grains in each teaspoonful; and granular effervescing citrate of bismuth and pepsin, of which each teaspoonful contains 5 grains of citrate of bismuth and 5 grains of pigs' pepsin. The caffein preparation is pure white, that of antipyrin has a slightly yellowish tinge. and that of bismuth and pepsin a decidedly yellowish tint. All three seem to be carefully and artistically prepared, and the only suggestion we have to make is that each bottle should be accompanied by a suitable measure, so as not to leave to chance the dose of so potent a drug as antipyrin.

Caffyn's Liquor Carnis.

In the number of this Journal for July, 1890 [Vol. XC., No. 223, Third Series, page 95], we noticed this deservedly popular preparation of uncooked meat-juice with approbation. We are requested by the "Liquor Carnis" Company (London) to mention, that the manufacture of the preparation has been recently slightly modified by flavouring it with celery—a change which, we are inclined to think, does improve its taste. Since we last noticed the preparation it has been ascertained that it may be given *hot* with coffee, cocoa, or arrowroot without any loss of its nutritive power. It may also be given with wine.

Tabloids of Compressed Pure Willow Charcoal.

These are the most recent addition to the long list of compressed "Tabloids" introduced into the market by Messrs. Burroughs, Wellcome & Co., of Snow Hill Buildings, London, E.C. The charcoal Tabloids each contain 5 grains of compressed pure willow charcoal, and are supplied in bottles of 25 and 100. One to five tabloids, or more, may be taken at a time, with a draught of water in dyspepsia attended with flatulency and acidity. As charcoal almost loses its antiseptic and absorbent properties in the moist state, we are disposed to think that these tabloids will act beneficially, not "as an antiseptic and absorbent," but mechanically by stimulating the gastric mucous membrane.

Medicine Cachets.

Messrs. Burroughs, Wellcome, & Co., of Snow Hill Buildings, London, E.C., have submitted to us a box of E. Gorlin's patent wafer medicine cachets, for enclosing solid and liquid medicines of a nauseous kind, such as castor-oil, copaiba, kousso, and so on. Included in the box are a mould and spoon. At first sight, the size of the cachet suggests a difficulty in swallowing it, but those who are doubtful are recommended to try an empty cachet in the first instance. "Tabloids," pills, and powders, may also be taken wrapped in a cachet, which must be placed in the mould and its edges and lid moistened with water. The medicine having been poured into the cachet, the mould is closed, and careful pressure along the edges is kept up for a moment. The cachet may then be taken out of the mould and dipped in water in the bowl of a dessert-spoon. When so moistened it may be comfortably swallowed with a little water. The following is an illustration of this ingenious contrivance:—

Quinine Tabloids.

Messrs Burroughs, Wellcome & Co. have also submitted for our inspection and trial a specimen of their "tabloids" of quinine bisulphate. These will be found much more readily soluble than ordinary pills of quinine. The crystals are reduced to a fine powder and are compressed in such a way as to disintegrate in the stomach within a minute from the time they are swallowed. In proof of this, one of the quinine "tabloids" may be placed in a glass of water. It will completely disintegrate in less than two minutes. These tabloids possess all the advantages of a solution in point of rapidity of action, while at the same time they are most portable, and on account of their more flattened shape are more easily swallowed than ordinary round pills. As our readers are aware, the bisulphate of quinine is soluble in ten parts of water, while the sulphate usually requires 740 parts to dissolve it.

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OF

MEDICAL SCIENCE.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XV.—*Hypnotism.*[a] By FRANCIS R. CRUISE, M.D., Univ. Dubl.; ex-President of the Royal College of Physicians of Ireland; Consulting Physician to the Mater Misericordiæ Hospital, Dublin.

IT occurs to me that, as the practical knowledge of hypnotism is very limited in Ireland, it may be interesting to the members of the Royal Academy of Medicine in Ireland to hear a brief account of what I have seen with my own eyes of this strange subject.

For the last couple of years I read a good deal on this topic, mainly owing to the solicitations of a friend—a very learned clergyman—who was attracted by the startling psychological problems it involved touching vital questions of moral responsibility. My studies included the works of Dr. Lloyd Tuckey,[b] of London; Drs. Liébault[c] and Bernheim,[d] of Nancy; Drs. Fontan, Ségard,[e] and others; and I ultimately was led, at the commencement of last year, to the conclusion that the statements made concerning hypnotism were either astounding facts or most audacious falsehoods.

[a] Read before the Medical Section of the Royal Academy of Medicine in Ireland on Friday, April 17th, 1891. [For the discussion on this paper, see page 455.]

[b] Psycho-Therapeutics. By C. Lloyd Tuckey, M.D. London: Baillière, Tindall, and Cox. 1890.

[c] Le Sommeil Provoqué. Par A. A. Liébault. Paris: Octave Doin. 1889.

[d] De la Suggestion, &c. Par le Dr. Bernheim. Octave Doin. 1888.

[e] Éléments de Médecine Suggestive. Par le Dr. Fontan et le Dr. Ségard. Paris: Octave Doin. 1887.

Being anxious to set my mind at rest, I proceeded to Nancy last June, and placed myself under the tuition of Drs. Liébault and Bernheim. Later on I came to Paris, and there followed the clinical instructions of Dr. Luys, at the Charité, Dr. Auguste Voisin, and Dr. Guinon, the Chef de Clinique of M. Charcot, at the Salpêtrière.

I may now state at once that, after somewhat extended, and, I hope, unprejudiced study, I arrived at the conclusion that hypnotism is a reality—a most extraordinary and interesting development of neurological and psychological science, and in certain cases a potent aid to therapeusis. I am fully prepared and reconciled to the probability that the statements I am about to make may be received with incredulity, and even derision. Had I heard them myself a year ago, I think I should have been very sceptical. However, that is of no moment—*Magna est veritas et prœvalebit.*

I do not intend on the present occasion to enter upon any full account of the history of hypnotism—such may be found in all the standard treatises bearing on it, and notably in a clever article by Dr. Campbell Clark, in the number of the *National Review* for February of this year. The subject is still more exhaustively treated in the first chapter of Dr. Bernheim's last work, published this year—"Études Nouvelles sur l'Hypnotisme, &c."[a] Indeed, the very short period at my command at present renders it impossible for me to do more than barely touch the subject of hypnotism. As regards history, suffice it to say that, while known and practised, after a fashion, in very ancient times, hypnotism was prominently revived by Mesmer, who flourished at the end of the last and commencement of this century. Later, some fifty years ago, Mr. Braid, a Manchester surgeon, re-introduced it, and showed that it might in some instances be made practically useful in medicine. Braid has the merit of foreshadowing its true application by combining with mesmeric sleep the manipulation of the diseased parts—the first effort to combine *suggestion* with artificial sleep. Still later hypnotism was again brought to the front by Dr. Ambroise Liébault, of Nancy, to whom we are indebted for its present position, and for its establishment on a solid basis of usefulness by combination with systematic *verbal suggestion.* Modern hypnotism is no longer a medical curiosity, a blind effort at cure without *rationale;* but it is the application of *suggestion*

[a] Hypnotisme, Suggestion, Psycho-Therapie. Études Nouvelles. Par le Dr. Bernheim. Paris : Octave Doin. 1891.

during provoked sleep, based on an extended and successful experience.

I think I cannot do better than relate here M. Liébault's story, as I heard it from himself, of how he came to combine hypnotism and suggestion, and thereby to revolutionise the treatment of a large class of ailments. I think at the present time it would be difficult, if not impossible, to set limits to the range of its applicability and contingent utility. M. Liébault told me that as a young practitioner he was often forcibly struck by the manifest effect on patients which he observed to follow the physician's expression of a decided opinion, favourable or the reverse. This he rightly attributed to the power of the mind and nervous system upon the physical condition. None of us are ignorant of it. Oftentimes we see patients die of fright, whilst others are saved because they are courageous and determined to recover if they can. Pondering over this problem, Liébault came to seek in what way he could apply *suggestion of cure* with the utmost possible advantage. After many trials he made the discovery that in "induced sleep"—hypnotism, in other words—when the personality of the subject is partially or nearly completely extinguished, and the imagination highly exalted, suggestion becomes infinitely more powerful than in the waking state. This was his point of departure—this is the *essence* of modern hypnotism.

The careful study of his remarkable essay, "Le Sommeil Provoqué," published in 1889, will amply repay all unbiassed students. In it he summarises the result of all his published contributions to the subject, which date back to the year 1868.

Despite ridicule and neglect, Liébault, with the earnestness of a true scientist, and the concentrated disinterested devotion of his compatriots, worked and worked until he proved to many observers that he had struck upon a mine of wealth in therapeutics, and his method came to be tested and adopted by numbers in France and elsewhere. His most remarkable pupil, Dr. Henri Bernheim, Physician to the Hôpital Civil at Nancy, and Professor of the Faculty of Medicine there, took the matter up, and utilised his vast field of observation. The result of his labours is embodied in his exhaustive work, "De la Suggestion, et de ses Applications à la Thérapeutique," published in 1888, and also in his later essay already quoted. The study and practice of hypnotism has gradually spread in France and elsewhere, and now reckons amongst its advocates many illustrious names in Germany, Belgium, Holland,

Switzerland, America, England, and elsewhere. It seems to me that it is full time for us in Ireland to investigate the matter.

Now, to proceed, let us suppose ourselves in M. Liébault's consulting rooms—Dispensary, in fact—in the Rue Bellevue, at Nancy.

From seven in the morning till noon he works, or rather, I should say, used to work, for since the time of my visit he has retired. He is a bright, intelligent, old gentleman—simple, kindly in manner, and sympathetic with all his patients, who stream in to seek his aid, mostly when all other means of cure have failed.

There were to be seen many phases of disease—chest affections, heart diseases, dyspepsia in all its phases, uterine ailments, diseases of the nervous system, ataxy, paralysis agitans, writer's cramp, neuralgia, hysteria—men and women of all ages, and many children.

His procedure was as follows:—He placed the patients in turn in an easy reclining chair, with their backs to the light, questioned them closely as to their symptoms and sufferings, with a *naïveté* quite astonishing to anyone accustomed to separate sexes and ages, and forthwith hypnotised them. His method is to make the subject stare at two of his fingers, which he places a few inches from their eyes, and as soon as the eyes begin to water, and the pupils to dilate, he suggests "sleep" in an emphatic manner, and then closes their eyelids, gently pressing the eyeballs.

In *nearly every* case, sooner or later, the patients passed into sleep, of very various degrees, no doubt; but to all he *suggested verbally* that on awakening their symptoms would be improved, at the same time rubbing strongly the seat of disease. In ten minutes or less he awakened them by fanning the face; and when they were aroused, mostly very cold and disposed to rigor, all stated that their symptoms, whatever they may have been, were improved, and they went their way, returning in one or more days as he directed. I had the opportunity of closely interrogating these patients, and found all had the same story to tell—namely, that after Dr. Liébault's course of treatment—short or long as he required—they were either cured or relieved. Many of the cases were quite incurable, and relief only was possible; in others the cure was averred to be complete and lasting. Such was M. Liébault's clinique. It would be impossible to conceive anything more free from the faintest attempt at deception or clap-trap of any kind. The rooms were very plain, the doctor the impersonation

of simple truth, and the patients for the most part of a humble class—the least likely to expend their time unless satisfied with the value received.

A few remarks seem needful here. As I stated, nearly all succumbed to hypnosis—fully 75 per cent. A few proved to be not hypnotisable. The cases in which I saw M. Liébault fail were women and children. In these instances it seemed impossible to fix the gaze, attention, and consent. Whenever these points were attainable the patient slept. As I observed already, the degree of hypnosis was variable. M. Liébault classifies it into six stages, which I may relate here, as his division seems very simple and practical, although not adopted in all details by Bernheim and others:—

1st degree—Light sleep.

2nd degree—Deep sleep. In this, sensibility is so lost that a needle puncture or touch to the conjunctiva does not arouse.

3rd degree—Deep sleep, with the possibility of suggesting either catalepsy or automatic movement.

4th degree—Still deeper sleep, in which the patient loses relation with all the surroundings, and does not respond to any voice *except that of the hypnotiser.*

5th and 6th degrees—Different degrees of somnambulism, in which the patient becomes more or less completely an automaton in the hands of the hypnotiser, and when wakened is totally oblivious of all that has been said or done at the bidding of the operator. Interesting as all these gradations of hypnosis are, especially from a psychological point of view, I cannot now enter upon them. Suffice it to say that in all *suggestion* is potent for therapeusis.

I shall not attempt to theorise or offer any explanation of this extraordinary fact. I have long since arrived at that period of mental development—for good or ill—at which I have ceased to attempt explanation. If a body set free falls to the earth, I call it, as I have been taught, *gravitation.* That word expresses a fact but explains nothing. I know that quinine lowers temperature and cures many neuralgias, that aloes purges, and opium stops the purging. Of the why and wherefore I know nothing. So also I must acknowledge of the power of suggestion in hypnosis.

If I must theorise on this point I would do so by analogy. Quinine alters the circulation in the brain and in the nervous system, and thus, I presume, alters the condition of the brain,

which is necessary for the sensation of pain, &c. May it not be so of hypnosis? Obviously this theory merely puts back the difficulty a stage. Explanation there is none; no more than of the countless processes of physical science which we see pass before us daily. It seems to me more profitable, with our present means of knowledge, to observe and treasure up facts, especially when they help us to cure or relieve. Behind all physical phenonema is the Almighty Power that works and directs them, and teaches us, if we are wise, how little we know beyond mere ultimate facts and the generalisation therefrom.

I feel confident that so candid and genuine a lover of science as M. Liébault will not be displeased with me if I make a gentle criticism on his practice. I think he relies too completely on hypnotism in the treatment of disease, and too rarely accepts any other aid from our extensive medical armamentarium. This is explicable in a fashion. He has done so much to bring forward hypnotism, and to demonstrate its power, that he, as it were, rides his hobby a trifle too hard.

So much for my visit to M. Liébault at the Rue Bellevue. I am glad, indeed, that I was in time to see his successful practice there, which I can never forget or fail to appreciate at its high value.

Now, let us visit Dr. Bernheim at the Hôpital Civil. He is one of the most trusted and prominent medical men in Nancy, and Physician to the great hospital of that city. He is not young—certainly, as old as I am. Ten years ago he was an absolute sceptic regarding hypnotism and suggestion, but was induced to try it after seeing the strange and unexpected cures worked by his friend Liébault. Now, after making 10,000 experiments, he has become a firm believer in its efficacy in certain cases, and he uses it on a vast scale.

His practice differs from that of Liébault in this, that he merely adds hypnotism as an adjunct to other therapeutic agencies. Let us follow him during the visit to his huge wards, filled with every possible form of malady. He treats disease as we all do. For pneumonia he prescribes quinine and poultices; for rheumatism he gives salicylate of sodium; for phthisis cod-liver oil and phosphates, and so on. But, for many cases, if he thinks it desirable, he adds hypnotism and suggestion.

To the sleepless pneumonic patient, to whom he dares not give opium, he administers hypnotism and suggestion of sleep. The

patient mostly responds and sleeps. The rheumatic patient finds relief of his pains, the phthisical of his cough and other distressing symptoms.

In dealing with patients whose ailments are essentially neurotic, he relies mainly on hypnotism. By it he rapidly cures their neuralgias, functional paralysis, hysterical crises, writer's cramp, insomnia, &c., lessens and postpones, and often cures epileptic convulsions and analogous troubles. Of all these effects I speak as an eye-witness.

With dipsomaniacs he suggests the horror of stimulants, and in a large proportion of cases, when they awaken, there remains a fixed dislike of what previously had been their absorbing passion. These cases of alcoholism offer the most remarkable and satisfactory cures under treatment by hypnotism. In many other vicious habits and mental failures, respecting which it is too common with physicians to overlook the purely physical element, like good results are obtainable by hypnotism.

M. Bernheim does not for a moment pretend that hypnotism can cure organic disease, such as cancer, phthisis, paralysis from cerebral effusion, with destruction of motor centres; but even in such cases it relieves the most distressing symptoms, and even modifies organic changes in a very curious manner. The special field for treatment by hypnotism is non-organic functional disease, and we all know how rebellious to ordinary medication these ailments often are. Strange as it may appear at first sight that psychical influence can modify organic conditions, a little reflection prepares us to find such the fact. We all know how markedly digestion, assimilation, and nutrition are influenced by mental conditions. Should not this prepare us for much more?

M. Bernheim's method of hypnotising differs slightly from that of Liébault. He relies mainly on *suggestion*. Looking intently at the patient, he "commands" them to sleep. Nearly all succumb rapidly; then he closes their eyes, pressing the eyeballs gently, and tells them to sleep on until he comes back to waken them. As I have seen, they usually sleep until he bids them waken.

That the sleep is real is quite manifest, for the insertion of a needle through the skin of the arm or back of the hand does not rouse them if they enter the third or subsequent degrees, and when awakened, they look with wonder at the tender bleeding puncture.

I do not think that M. Bernheim's method is available for most persons. It needs great experience, such as his, and a certain power of will and influence on the part of the operator. Usually, it is needful to *tire out* the patient's senses, be it the sight or hearing, by a monotonous stare at a bright object, or by listening to a continued sound, adding *then* the suggestion of sleep. This is the method which I have found effectual in my own practice. Doubtless, if I had the experience and power of Dr. Bernheim I might succeed as he does.

Like Dr. Liébault, Dr. Bernheim is delighted to see visitors, and profuse in his attention to them. After a short time he taught me to hypnotise, and allowed me to operate on his patients before the class. I soon made the observation, which I confirmed in Paris, that operators vary a good deal in their power. Some succeed at once, others more slowly, and a few fail altogether. Patience, kindness, and a firm will appear indispensable.

It would occupy hours if I were to describe even a fraction of the cases which I saw and noted in M. Bernheim's wards during my stay at Nancy. I shall not attempt to trespass on your patience by so doing, but trust you will allow me to give some details of a few.

The first I shall select exemplifies the power of hypnotism in relieving distressing symptoms in a case of organic disease, and, moreover, illustrates that very curious state known as *somnambulism*, which occurs in the fifth and sixth degrees of hypnosis, as classified by Liébault. The patient was a man aged forty-two, a soldier discharged from the army, owing to disease of the aortic valves, or, as M. Bernheim correctly termed it, "la maladie de Corrigan." The ailment was not far advanced, and the patient's troubles were mainly insomnia and dyspnœa. Hypnotism, with suggestion of sleep and facility of respiration, gave marked relief, and was repeated whenever the effect wore off. This patient proved a very susceptible subject, and slept profoundly, developing the condition of somnambulism. One day, M. Bernheim said to me, "I will now show you a somnambulist." The patient being profoundly hypnotised, M. Bernheim suggested to him as follows—"Sleep for ten minutes, then get up, walk across the ward to bed No. 15, take the night-cap of the patient there, place it under your own pillow, then open the window, and you will hear music." We left the man sleeping. In just ten minutes he rose, crossed the ward slowly and carefully, his eyes being closed, took the night-cap

from bed No. 15, brought it over, and placed it under his own pillow. Then he went to the window, threw it open and leant out. His face now expressed the keenest delight, and he remained standing until M. Bernheim awoke him by blowing on his eyelids. When questioned about the night-cap under his pillow he was utterly astonished, knew nothing about it, and when asked why he stood at the open window, replied, "I thought I was back with my regiment, and that the band was playing."

His sleep being profound—somnambulistic in fact—he had not the faintest recollection of the suggestion which caused him to go through the evolutions described. This was one of many similar cases which I witnessed in the services of Drs. Bernheim and Liébault.

I shall now describe a case of cure of a fixed neuralgia of long duration, accomplished by hypnotism and suggestion.

One morning, while on his rounds, M. Bernheim found a new patient just received into hospital. He was a bronzed, weather-beaten man of some fifty to fifty-five years of age—a workman in one of the iron foundries which abound near Nancy. He complained of a fixed pain in the region of the right false ribs, over the liver. This pain had come on suddenly about a year before, while he was making great exertion in lifting a heavy bar of iron. It was constant, disabled him from working, undermined his health, and had reduced him to poverty. He had undergone much treatment, and the affected region bore evidence of severe counter-irritation in the cicatrices caused by the actual cautery, of which our Gallic brethren are so fond. The whole side was so tender that he could barely allow us to examine it.

M. Bernheim said to me across the bed, "I am glad you are here to-day. This is a case in which I expect a very good result from hypnotism."

He then hypnotised the patient, suggested that on awakening the pain would be better, and at the same time rubbed strongly over the affected parts. In ten minutes he returned and wakened the patient. The pain was gone! The side was so insensible that no complaint was made on vigorous palpation! This patient proved to be a somnambulist. He had no recollection of where he was, or of having ever seen M. Bernheim or me. I asked M. Bernheim what explanation he had to offer of such a marvellous result. He replied, "I can give none satisfactory. If I must propose any, I would say that as the pain was felt in the brain,

the cauteries, &c., only fixed it there, and hypnotism has so altered the cerebral condition that sensibility is destroyed." I had the opportunity of watching the subsequent progress of this case. The pain returned in the evening, but greatly mitigated. A daily repetition of hypnosis gradually extinguished it, and in nine days it was completely gone.

All this sounds like a fairy tale. As it happens, I was able, last month, to relieve by hypnotism and suggestion an almost identical neuralgia of long duration, in a young girl, which had resisted all other treatment. As in Dr. Bernheim's case, the pain returned, in a mitigated form; but after five repetitions of the hypnosis a full week's perfect relief ensued, and the girl went home. This patient was under the care of my colleague, Dr. Joseph Redmond, at the Mater Misericordiæ Hospital. He will bear out what I state. We have recently ascertained that the cure has been permanent. This is only one of many successes I have had. Dr. Charles FitzGerald tells me that he has cured by hypnotism and suggestion a case of tinnitus aurium when all other remedies failed. Dr. Richard Hayes has also had some remarkable results.

I took an opportunity of inquiring from M. Bernheim his opinion of hypnotism in surgical operations. It was adverse. He told me that in some exceptional cases, especially in superficial operations, it succeeded; but, as a rule, could not replace chloroform or ether. He found that patients went to sleep in such circumstances in terror of the operation, rarely slept well, and were apt to awaken too soon—in fact, that auto-suggestion counterbalanced hypnosis and suggestion.

However, that such is not invariably the case is amply proved by a demonstration given at Leeds, on the 28th of March of last year, by Mr. Milne Bramwell, of Goole, when a number of severe operations were performed under hypnosis, without inflicting the slightest pain. A full account of these will be found in the *Provincial Medical Journal* of May, 1890, together with the marked favourable testimony of Mr. Pridgin Teale, who was present.

Time presses, and I must not tarry. I have drawn a very imperfect sketch of what I saw at Nancy, in the services of Drs. Liébault and Bernheim, and must now leave them. When parting, M. Bernheim gave me a few words of advice—kindly and emphatic. He assured me that he had taught me all he could within the limits of a short visit, and that he could teach me no more unless I remained with him for three or four months. "You must now

learn," he said, "the rest by your own experience. Remember, above all, that *suggestion* is the basis of the new departure; you must learn to dominate, by your will and power, those whom you treat. When you can hypnotise them (and with perseverance you can do so with much the greater number), your capacity to benefit your patients will daily grow."

I not only believe him, but have found untold value in his instructions, and also a solution of much that was previously quite inexplicable. The present time offers no fit opportunity for dilating upon his idea; but I cannot help remarking that it elucidates much that was hitherto mysterious to me—for example, the effects of metallo-therapy, homœopathy, electro-homœopathy, "faith-cure," and so on. I believe that *suggestion, plus receptivity*, is at the bottom of all.

I regret that from want of time I dare not attempt to open up here the wide field of deeply-interesting study offered by the marvellous effects of suggestion, auto-suggestion, hypnotic suggestion, and post-hypnotic suggestion. The more I have worked at these problems the more convinced I have become that at present we are quite unable to define the power and limit of suggestion, both in medicine and outside of it.[a]

From Nancy I betook myself to Paris, and there followed the clinical teaching of M. Luys, M. Auguste Voisin, and M. Guinon. I found each most instructive in its special line.

No one can avoid being struck at once by a very marked difference in the doctrine of hypnotism and suggestion as held at Nancy, and at Paris, especially in the school of M. Charcot.

While the latter leans strongly to the idea that hypnosis is a neuropathic state, including that imperfectly defined group of conditions termed hysteria, the Nancy professors deny this in the main. I confess, from what I saw myself, I lean, on this point, to the doctrine of Nancy. Again, while the Nancy professors hold a very strong view as to the possibility of hypnotism being used for criminal ends, and with success, the Charcot school differs from them, and rather sneers at what it terms "Les crimes du laboratoire." On this point I am led from observation towards the latter view. Thus, it will be observed, each of these schools has its differences and its merits. Later on we shall revert to this very interesting and important subject.

[a] See work by Dr. Moll, of Berlin. English translation published by Walter Scott, London. 1890.

M. Luys' clinique is very remarkable. He practises hypnotism and suggestion largely, and in addition has introduced a novel and quite peculiar application of these elements. This he terms "Guérison par transfert."

I can best explain this matter by detailing a cure which I saw, and which has since been published in the *Revue d'Hypnologie* of August, 1890.[a] A woman, twenty-two years of age, had been sent to M. Luys by one of his colleagues at the Charité Hospital, who had totally failed to cure her by ordinary medication. Four months previously, in consequence of a fright, she had become affected by a spastic condition of the lower limbs, which ultimately spread to the arms and back. The thighs and legs were as rigid as a bar of wood, and movement or even standing was impossible. M. Luys said to the class—"In ten minutes I will have this girl walking up and down the ward."

He placed her lying on a wide bed, and alongside of her a subject whom he knew he could easily hypnotise profoundly. All being ready, he made the patient and subject join hands, then he hypnotised the subject, and taking a powerful magnet, such as I now exhibit, passed it repeatedly in a circular direction so as nearly to touch the patient and subject, the positive pole being directed towards them. Within five or six minutes the limbs of the patient were perfectly pliant and under her control, while those of the subject passed into a state of spastic rigidity. Then he commanded the patient to rise and walk about the ward. She did so at once, needing only the arm of an assistant to help her, as she was giddy from long confinement in the recumbent posture. Meantime the subject remained lying on the bed with the lower limbs immovably rigid. Awakening her, M. Luys told her to rise and join the patient. In a few seconds the spastic condition was gone, and she, too, walked about the ward.

In this case, be it remembered, the patient was *not* hypnotised, and yet the cure was complete. I had the opportunity of seeing that it became permanent after a few repetitions of the process described. I should hesitate very much to discredit M. Luys' belief that this was a case of cure "par transfert," yet I could not help thinking of M. Bernheim's words, and leaning to the idea that it was rather a cure "par suggestion." This mode of "Guérison par transfert" is a new departure, and needs wide confirmation before we can accept it as we must the extraordinary cures daily

[a] Paris. Georges Carré, Éditeur.

worked by hypnotism and suggestion. It would seem to me needful that such processes should be subjected to extraordinary precaution and watchfulness, to guard against the possibility of their being dominated by mere suggestion, ere we accept unreservedly the doctrine of "transfert." Many other details of M. Luys' demonstrations seemed to me to require similar safeguarding and precaution. Withal, his clinique is most interesting—his lectures especially so—and well worthy of attention. To him we are indebted for the introduction of hypnotism in obstetrical practice. He discovered that if a patient is trained to hypnosis by a few séances previous to confinement, it is only needful when labour comes on to send her to sleep, and the entire process goes on painlessly. Dr. Kingsbury, who is present here, has recorded a successful case of this nature in the *British Medical Journal* for February 28th, 1891.

I should mention that M. Luys' mode of inducing hypnosis is different from that adopted by most other specialists. He relies mainly on "fascination" by a rotatory mirror. Placing the patients in the recumbent posture on a couch or arm-chair, he makes them stare intently at a revolving mirror, such as I now exhibit, situated at a distance of from twelve inches to a few feet. After about five minutes most succumb. This method has the advantage of saving the operator from fatigue, which is not inconsiderable when a fixed stare is used to tire out the sense of sight. It is further interesting by showing how erroneous it is to suppose that there is any magnetic influence at work in hypnotism, or indispensable influence of one individual over another.

Now, let me ask you to follow me to the Salpêtrière Hospital, where M. Auguste Voisin uses hypnotism, with enormous success, in the treatment of the poor lunatic inmates. I say enormous success advisedly; for whenever he is able to hypnotise these poor creatures—which is very difficult, and often impossible—the results are marvellous. It is a most profitable study to witness his wonderful patience and indomitable perseverance. The first case upon which I saw him operate was a young woman who, on admission, was permanently maniacal. By repeated steady efforts he ultimately succeeded in inducing hypnosis, with the result that, by suggestion, he cured her delusions, and only at special periods the least excitement recurred. At the time of my visit one of the crises was at hand, and I witnessed his process of inducing sleep, which, once produced, lasted an hour, and then left her perfectly

tranquil. The poor girl was quite unwilling to be hypnotised, and this was the first instance in which I saw a patient hypnotised against consent—a wholly exceptional event. M. Voisin placed her in bed, and "stared" her to sleep. At first she resisted so violently that it required three nurses to hold her. Failing at the onset, he overcame physical resistance by a few whiffs of chloroform, and then succeeded in inducing complete and prolonged sleep.

The next patient was a woman who had been a confirmed dipsomaniac, and lost her reason thereby. By repeated hypnotism and suggestion M. Voisin not alone cured her of the mania, but also of her evil propensity. Nothing would induce her to touch a stimulant.

This case made a very strong impression on me, which has, as we shall see, led to a similar cure in my hands and those of my friend, Dr. J. J. Murphy, who will tell you the story himself.

Again, M. Voisin hypnotised a patient who was in process of cure of mania, and as she had a strumous knee, with effusion, he took the opportunity of firing the deceased part with the actual cautery, *but without waking her.* He showed me another violent maniac whom he had hypnotised a week before, and *kept asleep*, awakening only when the nurse brought her food, and made her rise for needful wants. He told me that whenever he was able to accomplish this feat—of keeping a patient asleep for ten or fifteen days—the improvement in the mental condition was most remarkable.

He showed me another case, an out-patient, a young girl with incipient mania with delusions, in whom, by repeated hypnosis and suggestion against the delusions, he had aborted the attack. He assured me that he had been most successful in such instances.

M. Voisin has published in the *Revue de l'Hypnotisme*[a] for March last a very remarkable paper, in which he shows the result of urinary analysis in a case in which he induced this prolonged sleep. The results at which he arrives, and upon solid grounds, are:—

1. That nutrition is not disturbed in hypnotic sleep.
2. That hypnotism is not a pathological state.
3. That hypnotism is a therapeutic agent which we may use without risk to the nutrition of the patient.

Time forbids me from giving further details of all I saw in M. Voisin's most remarkable and interesting clinique; but I would

[a] Rédaction. No. 40 bis, Rue de Rivoli, Paris.

suggest to all interested in the subject to read two papers—one is M. Voisin's Memoir, in the "Comptes Rendus" of the International Congress on Hypnotism, held in Paris during August, 1889, pages 147 to 157;[a] and the other is a very graphic account of a visit to his wards. published in the *Tablet* of June 14th, 1890.

My visit to M. Charcot's wards in the Salpêtrière was comparatively short, and although I had the advantage of seeing there many rare cases of disease of the nervous system, including a typical instance of hystero-epilepsy in a young man, I did not witness there much treatment by hypnotism.

Thanks to the special kindness of M. Georges Guinon—M. Charcot's chef de clinique—I had the opportunity of examining one remarkable somnambulist, to whose case I shall later allude.

It is of vital importance now that we should consider the objections which may be raised against hypnotism.

These may be classified into—

(*a*). Those of a physical nature, and

(*b*). Those based on moral grounds.

(*a*). As regards the former, we have the evidence of experts of large experience, such as Liébault, Bernheim, Luys, and Voisin, and they assure us that such objections are groundless.

If accidents have arisen it was only in the hands of unskilled, non-medical operators. So far as I am aware, no case has been recorded of injury to a patient's health where hypnotism was used by a skilled physician.

Dr. Nolan, Senior Assistant Medical Superintendent at the Richmond District Lunatic Asylum, in the *Journal of Mental Science*, Jan., 1891, records a case of "Stuperose Insanity consecutive to induced Hypnosis." I think anyone who reads this very interesting paper will agree with me that the subject, from the great injury inflicted on his nervous system by a very dissipated and irregular life, as well as from his family history, was a very likely subject indeed for an attack of insanity. Moreover, the hypnosis to which he was subjected was induced by a wholly unskilled and unscientific person.

My friend, Dr. Hadden, of Grosvenor-road, Rathmines, told me of another case, which he saw, where an attack like brain fever ensued after hypnosis. Here again the operator was an individual totally ignorant of the subject—a young friend of the patient. In this case, as in the former, the hypnotism was induced as an

[a] Paris: Octave Doin. 1890.

experiment, without any curative end in view. A similar misadventure is recorded in the *British Medical Journal* for March 28th, 1891. The conclusion which I would deduce from these cases is—that it is highly improper, and possibly dangerous, for anyone who is not an educated physician, and familiar with the practice, to attempt hypnotism, and that it should never be induced without due reason, precaution, and design. M. Bernheim[a] dwells strongly upon this point. I need hardly add as a corollary to the foregoing—that all public exhibitions of hypnotism are essentially objectionable, and possibly hazardous and demoralising, and that they should be prevented (as they are in many countries) by stringent law and heavy penalty.

Besides baseless objections on the score of injury to the health of the subject, many absurd difficulties are raised by the thoughtless. We are told by some that hypnotism is not new. I grant it, and would remind these wiseacres of the words of Ecclesiastes—"The thing that hath been, it is that which shall be, and that which is done is that which shall be done, and there is no new thing under the sun." Nevertheless there *is* a new departure in modern hypnotism—the hypnotism of Liébault—namely, the combination of *suggestion with induced sleep.*

Again we are told that hypnotism is incomprehensible. This might need reply if anything else in Natural Science was comprehensible, but we know it is not. The ringing of an electrical bell can be easily demonstrated up to the point when we are asked why a current of electricity passing round a piece of iron converts it for the time into a magnet. Of that we know no more than we do why the earth goes round the sun. So of hypnotism.

It is further objected that hypnotism is useful only in affections of the nervous system. My reply is simple. In the first place, the charge is *untrue;* and secondly, *if it were true,* it would bear strongly in favour of hypnotism, because these very ailments are avowedly the most rebellious to ordinary medical treatment.

(*b*). Passing on to the objections which may be urged against hypnotism upon the score of morality, I feel that I tread upon very delicate ground. There is no doubt that it is a very serious matter to submit our free will to the domination of another, and, as it were, to confide ourselves into his hands. Nevertheless we freely consent, without hesitation, to do this every day when we

[a] See page 575 and following of his Essay, already quoted, Second Edition, dated 1888. Paris: Octave Doin.

take anæsthetics—such as nitrous oxide gas, chloroform, methylene, or ether. The reason we do not shrink is because we always make sure to entrust ourselves to those in whom we have full confidence. Why should not the same precaution justify us in submitting ourselves, or our patients, to hypnotism?

Even granting—which I do—that the surrender of will and action in hypnosis is greater than in the case of ordinary anæsthetics, the decision must be similar, and is summed up in one advice: "Take care whom you allow to hypnotise you."

Bernheim lays down three rules which seem to include all needful precaution on the part of the hypnotiser. Let me quote them:—

(1st). Never hypnotise any subject without his formal consent, or the consent of those in authority over him.

(2nd). Never induce sleep except in the presence of a third person, in authority, who can guarantee the good faith of the hypnotiser and the subject. Thus any trouble may be avoided in the event of an accusation, or any suspicion of an attempt which is not for the relief of the subject.

(3rd). Never give to the hypnotised subject, without his consent, any other suggestions than those necessary for his cure. The physician has no rights but those conferred upon him by the patient. He should limit himself to the therapeutic suggestion; any other experiment is forbidden him without the formal consent of the patient, even if it be in the interest of science. The physician should not profit by his authority over the patient in order to obtain this consent if he thinks that the experiment which he wishes to perform may have the slightest harmful effect.

Speaking as an Irish physician, I say, with confidence, that the cases in which the power of hypnotism and suggestion are likely to be abused are so problematical as not to constitute a valid objection. Nay, more, the very dangers which, in evil hands, might arise, should impel all those who wish to use this potent remedy honestly, and for the highest ends, to take up its study and practice, and carry it out with due honour and fidelity to a great trust.

Satisfied, as I now am, that hypnotism is a reality, a great means towards cure, one which can never be crushed by ignorant and baseless criticism, I believe that it is our duty—imperative duty—to do it justice, and rescue it from the hands of charlatans. *As we use it, it will be good or evil.*

It has been argued that, in actual reality, a hypnotised subject

falls permanently under the dominion of the hypnotiser, and may be made to act criminally by his suggestion. From what I have seen myself I think this idea has been hugely exaggerated. In the first place, if such should ever arise, the suggestions must have been criminal—*the very event which we should carefully obviate in every possible way.* Granting that criminal suggestions have been made (and then we know where the wrong lies), there is ample evidence to show that conscience, even dormant as it is in hypnosis, is not extinguished, and the evil suggestions will be resisted and rejected if the conscience of the hypnotical subject is opposed to them. Let me quote a case in point. I mentioned that I had examined a typical somnambulist in the service of M. Charcot, shown to me by M. Guinon. During the somnambulistic state M. Guinon urged this girl to stab one of the class there present, and placed in her hand a mock dagger. She approached the student, looked intently at him, hesitated, then turned away and threw down the dagger. Even in somnambulism her conscience predominated.

Apropos to this matter, I may record a case in which I saw M. Bernheim endeavour to elicit from a somnambulist his "political opinions." After prolonged cross-examination the patient declined to reveal them, and, folding his arms, said, "C'est mon affaire."

What a remarkable contrast to the awkward confessions occasionally volunteered under the influence of chloroform and ether.

Certain it appears that if criminal suggestions are ever made, *which they should not be*, it remains for the dormant conscience of the subject, whatever it may be, to accept or reject them. This point might lead me, if time permitted, to show how unnecessary it is to drag hypnotism into the domain of crime. It is quite too much the fashion now-a-days to put down all evil influences manifested to hypnotism. This is not unnatural, though baseless. There is something so extraordinary and weird in the phenomena of hypnotism that it seems quite in accordance with the bias of the superstitious and ignorant mind to imagine its presence where it does not exist, and even to exaggerate its powers in a grotesque fashion.

Lately a remarkable illustration of this tendency occurred in Paris, in the famous "Eyraud-Bompard affair."

Michel Eyraud, with the aid of his female accomplice, Gabrielle Bompard, murdered and robbed their victim, M. Gouffé, under circumstances of extraordinary cold blood and atrocity. The facts

were beyond doubt, but a vigorous effort was made by the counsel for Bompard to exonerate her, despite her very evil reputation, on the ground that she was under the hypnotic influence of Eyraud, and therefore irresponsible. It was well known, be it remembered, that Bompard was a hypnotic subject. The case was argued with great skill between the representatives of the Nancy and Paris schools, and the result was exactly in accordance with the views I have learned to adopt. The French jury, probably the most impressionable and emotional possible, rejected the plea of hypnotic influence, and condemned Bompard to 20 years' penal servitude. Probably, if she had not been a very pretty and attractive young woman, they would have sent her to the scaffold with Eyraud. This case proves conclusively that even in France, where the views concerning the power of hypnotic suggestion are held in an extreme form, the common sense of the jury prevailed. This is just as it should be. There was no need to import hypnotism into the case at all. The history of the world from the earliest periods demonstrates the evil influence of the stronger over the weaker mind, wholly apart from hypnotism, and if I were to select a very remote illustration of this I might point to the charm Eve exercised over Adam, to the ruin of our race, and yet we have no reason to suppose that hypnotism was practised in this instance, unless in the guise of "fascination."

I have lately read a violent diatribe against hypnotism, by the Abbé Touraude, of Alençon.[a] While respecting, as I am bound to do, the good intentions of this author, I cannot help thinking that it would have been wise on his part to have studied the subject *deeply and practically* before committing his opinions to paper. His essay, as it stands, though clever, contains much that is stupid, and is an instance of mistaken zeal—that zeal which is certainly *not* "according to knowledge." By skilful extracts and dovetailing of mesmeric and animal magnetic theories and anecdotes, with exceptional facts, quoted from works on hypnotism, as if they were every-day occurrences, he has furbished up a case which may mislead ignorant readers (and the bulk of his readers must be ignorant so far as hypnotism is concerned) to the belief that the whole affair is merely another form of magic, spiritism, and other diabolic interventions. Perhaps the best comment I can make on the Abbé Touraude's book is to quote an incident which occurred to

[a] L'Hypnotisme, ses Phenomenes et ses Dangers. Par L'Abbé A. Touraude. Paris: Bloud et Barral. 1889.

myself. When recently engaged in treating some patients by hypnotism at the Mater Misericordiæ Hospital, an antiquated countrywoman looked askance on the whole proceeding, and finally said to the sister in charge of the ward, "I think he might try it on me, so I will go to the chapel."

This delicate compliment reminded me that history repeats itself, and that there are still old women, of both sexes.

Now let me add a few words in conclusion. After a somewhat full and careful study of hypnotism, such as may be accomplished by reading, I felt in doubt and bewilderment, tinctured by a strong element of scepticism. In this frame of mind I went to the centres where it is practised on a large scale, and saw for myself what it is, what it can do, and where it fails. In my humble way, although sorely pressed by other absorbing avocations, I have tried it on a small scale, and with very encouraging results.

I have told you the conclusions to which I have been irresistibly drawn. Let those who would condemn hypnotism, without trial, do as I have done, and then record their verdict.

It seems scarcely philosophical to publish strong opinions upon insufficient evidence, and yet this appears rather the fashion just now. The last illustration of this misplaced zeal is a paper by Mr. Ernest Hart, the able editor of the Journal of the British Medical Association, in the issue of March 28th last. Oddly enough, his article appears while an investigation of the subject is actually in progress by a Committee of the said Association.

At all events, opinions matter little. Truth prevails, and Time settles all controversies.

ART. XVI.—*Should we give Hypnotism a Trial?*[a] By GEO. C. KINGSBURY, M.A., M.D., B.Ch., Univ. Dubl.; Blackpool.

FIFTY years ago, if anyone had ventured to ask the question, "Should we give hypnotism a trial?" in an assemblage like this, he would have been answered with a unanimous shout of derision, and his mental condition regarded afterwards with suspicion. The attitude of the profession and the public towards hypnotism at that time was faithfully mirrored by the press and pulpit. An extract from the *Lancet* for 1842 on the subject reads thus:—"We regard its abettors as quacks and impostors; they ought to

[a] Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, April 17, 1891. [For the discussion on this paper see page 455.]

be hooted out of professional society; . . . the patient, *alias* the victim, *alias* the *particeps criminis*, is almost as bad as the operator; and even *the man who reads about such performances is a leper*." The pulpit joined in the hue and cry, and many a preacher thought it his duty to denounce those who meddled with hypnotism as "possessed of devils."

As recently as 1889, Dr. Auguste Voisin, of the Salpêtrière, was laughed to scorn by the British Medical Association when he asserted that he had used hypnotism with advantage in certain ailments.

Last year, however, there was a transformation scene at Birmingham, for the members from nearly every Section of the Association crowded into the Psychological Department to discuss hypnotism, and witness a demonstration of some of its more evident phenomena, given by Dr. C. Lloyd Tuckey and myself. The result was a unanimous declaration that hypnotism should be investigated by a committee.

To-day, then, if the question is put, "Should we give hypnotism a trial?" though there are a good many of our leaders ready to shake their heads, there are not so many to say hard things of those who are, at least, willing to seek a little information before answering the question.

Will you give it a trial? I ask; and for this one reason, of many which might be urged. There are to-day thoughtful men, who are trained physicians—not mere fanatics—in France, Germany, Russia, Belgium, Holland, Austria, Spain, Italy, Greece, Denmark, Sweden, Norway, Switzerland, Portugal, and America, who, having practically tested hypnotism, declare that it is useful.

We are ready enough to test the merits of Pasteurism, Kochism, suspension, or any other novelty which is brought to our notice by men of repute. Why should we ignore hypnotism? which presents its credentials from so many countries; and some of these testimonials are based, not on the excitement of a momentary enthusiasm, but on years of careful observation.

Let me at once clear the ground by saying that, in speaking of hypnotism, I refer exclusively to what is known as "Nancy hypnotism."

Great misapprehension prevails, even amongst medical men, owing to confusion between the schools of Charcot and Nancy.

Charcot, in writing of hypnotism, means only what he calls "the greater hypnotism," which is really a manifestation of disease only

met with in hystero-epileptics, and even amongst them rarely. Whereas, when the Nancy teachers speak of hypnotism, they speak not of a disease, but of a method of treatment.

Though, from the standpoint of the psychologist and physiologist, Charcot's experiments are of great interest, they have little bearing on the practical work of the physician; and so, at present at any rate, we will not discuss them.

The Nancy treatment, which, at first sight, might seem absurd, is based on common sense. We all know what a powerful influence the mind has upon the body, and nowhere has this influence been more fully appreciated, or its extent more accurately gauged, than here in Dublin, by men whose names are still cherished—in reverence by all, in affection by many.

Our own Dr. Stokes, in his classical work on "Diseases of the Heart," points out forcibly how depressing emotions retard recovery in disease; and, in speaking of cardiac neuralgia, says, "One of the most certain remedies consists in removing from the patient's mind the apprehension that his heart is organically diseased."

Dr. Graves, too, in his "Clinical Lectures on the Practice of Medicine," enforces the value of what he calls "moral impressions;" and instances a case of obstinate insomnia, in which he prescribed an inert drug, with the most authoritative statement that it could not fail—and it did not.

Sir James Paget, too, calls attention to the effect of mind upon nutrition, and says—"There is scarcely an organ the nutrition of which may not be affected by the mind." He gives, in illustration, the case of a woman who was suffering from a tumour in the breast, which she thought was cancerous. Paget boldly assured her it was not malignant, and that it would disappear shortly. The tumour began to shrink immediately, without any further treatment.

Trousseau, in his "Clinical Lectures," points out how neuralgia excites the neighbouring glands, and how the passions and intellectual engrossment affect secretion—anger modifying the lacteal secretion, fear producing diarrhœa; and impresses the fact that the whole digestive system, including the liver and the pancreas, may be affected by the mind.

The testimony of military men is unanimous in declaring that soldiers, in the excitement of battle, frequently receive serious wounds without the slightest consciousness.

Here, then, we have the *rationale* of hypnotic treatment in a nutshell.

If it is true that the mind has such a powerful effect on the body as to increase, diminish, or otherwise modify its secretions, to promote or retard recovery, to exaggerate or impair nutrition, to obliterate or heighten pain without the aid of hypnotic influence, does it not seem reasonable to suppose that, if by any means we can induce a condition of mind, marked by an exalted receptivity of suggestion so as to intensify this influence of the mind upon the body, we may be able, in some cases, to hasten absorption, encourage secretion, or conquer pain?

What, then, is hypnosis? It is a varying condition, marked at one end of the scale by mere drowsiness, and at the other by profound sleep, with somnambulism, the possibility of producing hallucinations which may even last when the sleep is over, and with total ignorance of what has taken place on waking, with several intermediate stages, in which anæsthesia is present.

About 70 per cent. of all persons tried will be found in some degree susceptible, but only about 15 per cent. reach the most profound stage, or are somnambulic during hypnosis.

All the stages, from the lightest to the most profound, are marked in some degree by a willingness to receive the suggestions of the operator, and such suggestions seem to take a more powerful hold of the patient's mind than they would in his normal condition.

Let me take a case in which the hypnosis is deep as an illustration. Here is a man suffering from acute neuralgia in the face. I hypnotise him, and he passes into sleep.

I say to him, "You are intensely hot." Very soon the perspiration is standing on his forehead, and his hands are moist.

I lift his arm up, and say, "Your arm will remain rigidly in that position." It remains cataleptic.

I say, "You cannot open your eyes." He struggles in vain to do so.

I tell him to walk up and down the room, and that he cannot stand still. He will walk until ordered to stop.

I say, "Now open your eyes, and you will not be able to see me." He opens his eyes, and inquires where I am hiding.

I now tell him, "Here is Mr. B.; he wants to see you." He looks, and greets the imaginary visitor.

I say, "Your neuralgia is now quite cured," and rub his face to further emphasise the verbal suggestion. I then say, "Now waken up." Instantly he wakens, and declares that not a vestige of the pain remains.

This is not a fancy picture; though, of course, in practice we never dream of subjecting our patients to any preliminary experiments, but go at once to the therapeutic suggestions.

In actual hypnotic work many patients who seem to derive benefit from suggestions do not become cataleptic or somnambulic, and at the conclusion of the sitting remember all that has taken place; but in these cases there is a drowsy feeling of content, and a blunting of the senses to everything but the voice of the operator.

The next point to touch on is—*How to hypnotise.*

To explain fully all the processes that may be employed would occupy the limits of a paper; so I will merely indicate the general principal of all, and detail one method.

The best illustration I can give you is from your own experiences. Have you ever been in church when the preacher had nothing particular to tell you, but insisted on droning out empty platitudes, in a dull monotone? If so, did you feel sleepy? This is the key to the production of hypnosis:—Your eye is wearied by gazing at the speaker, your body is exhausted with the constrained position, and your ear is dulled by the ceaseless hum of the speaker's voice; you grow heavy with sleep, and, unless your neighbour nudges you now and again, lo! and behold! you are hypnotised!

Hypnosis may be induced by the continued stimulation of any sense, as by fixed gazing at an object—a button, coin, pencil, nail in the wall, finger, or almost any other object will do. A monotonous sound, like the ticking of a watch, will sometimes succeed.

Binet and Féré produced hypnosis by fatiguing the sense of smell by the odour of musk. Continued strokings of the skin may be employed to induce the condition. Berger used warm plates to stimulate the skin. Pressure on the eyeballs will succeed in some cases, and so will simple passes. But the method I find most successful is that used by Liébeault at Nancy. Place the patient in an easy chair, with his back to the light; hold up one or two fingers for him to look at, and suggest to him, in a droning voice, that he is going to sleep. Presently, in a successful case, his pupils will be seen to dilate, his eyelids will begin to droop and flicker, and, after closing and opening listlessly once or twice, they will close and remain shut.

Now, supposing our patient to be in the hypnotic condition, *how must we proceed to treat his ailment?* Mainly by suggesting emphatically to him that he is either better or completely cured,

according to the degree of our own faith; but in some cases verbal suggestion may be greatly enhanced by other means. For instance, in cases of muscular rheumatism, neuralgia, &c., by friction; in pleuritic pain, by inducing the patient to inspire deeply; in functional paralysis, by ordering the patient to walk. One's own common sense will suggest in each case what particular plan to adopt.

In cases of inebriety or depraved habits, of course, a dislike should be suggested instead of the previous craving.

Now, how must we waken our patient? It is quite unusual for anything more to be required than the simple suggestion "Waken up now;" but in a few instances, where the patient remains drowsy, you may blow on his eyes, or fan his face.

What is the after-effect? Many people, who have no practical acquaintance with hypnotism, other than that seen on the platform of the showman, warn the public of the exhaustion, amounting to "neurasthenic collapse," following the hypnotic state.

I can safely say that I have induced hypnosis hundreds of times, but have never once seen even an approach to fatigue. Patients frequently say to me, "Could you not have let me have a good long sleep, it was so pleasant?" and nearly all express themselves as refreshed and feeling stronger.

Who can hypnotise? This question is often asked; and I can only say that I believe anyone can, to some extent; but here, as everywhere else, individual qualities tell. Some men have such natural gifts of face, voice, and manner, that their mere entrance into a sick man's room seems to inspire confidence and hope; such men will be successful hypnotists. Other men have such natural disadvantages that they seem to provoke distrust at first sight; these will not be so successful. But, allowing for individual differences, I think any man who will take the trouble to understand hypnotism will be successful in practising it, though some will always be more fortunate than others.

Who can be hypnotised? The next query is, naturally, who can be hypnotised? The best answer I can give to this is, by claiming my right as an Irishman of putting another question, which is—*Who can not be hypnotised?* for, distinctly, the majority of all the people you meet can be hypnotised. Some observers state the percentage at 95; others at 90, 85, and 80.

In this, as in all other statements connected with hypnotism, I prefer to leave a margin, and will be content with saying that, on an average, out of every 10 people 7 will be hypnotisable.

If this is correct, it effectually disposes of the popular notion that only hysterical or "neurasthenic" people can be influenced.

Children from about seven to fourteen are the best subjects, 50 per cent. being somnambulists.

Hysterical people are, in my experience, amongst the most difficult subjects.

Lunatics are particularly difficult to influence, and so are imbeciles.

Phthisical patients are especially susceptible.

Sex does not appear to exert any marked influence on susceptibility.

Nationality does not seem to be an important factor either, though it is held that the Oriental races are more easily influenced than others.

It is not necessary that people should be ill to be hypnotised—in fact, some of the very best subjects for experiment are athletes.

What cases should be treated? Medicine.—It seems to me justifiable to try hypnotic suggestion in all cases where a distinctly nervous element can be detected.

This will be found to cover a wider field than, perhaps, is thought at first mention; for it is surely within the experience of every physician that many of the most distressing ailments which make themselves known by physical symptoms are often mainly due to mental conditions. Who has not seen diabetes apparently caused by worry, gout determined by anxiety, or eczema seeming to originate in mental depression?

Then, again, there are the host of diseases which, for want of a better definition, we group under the title "nervous"—the neuralgias, insomnias, dyspepsias. palpitations, hysterias, neurasthenias, &c.

Again, we may include every affection which is accompanied by pain; though, in maintaining that we are justified in employing hypnotism in every case where there is pain, we do not mean to be understood as regarding the mere removal of suffering as synonymous with the cure of its cause, but just as opium frequently assists in the cure of disease by relieving pain, which might otherwise be so formidable a symptom as to exhaust our patient, or, if lesser in degree, to delay his recovery by prohibiting sleep and producing mental depression, so hypnotism may hasten recovery by favouring sleep and exciting hope.

Hypnotism may also be tried in all functional disorders.

This is so sweeping an assertion that I wish to qualify it by saying that there is no desire on the part of those who are investigating hypnotism to put it forward as a panacea, or successor to our usual methods of treatment; but I do think it should be tried in some cases alone, in others in conjunction with ordinary medicinal treatment.

Midwifery.—In midwifery practice I think it justifiable to try hypnotism, if it is thought desirable to employ any anæsthetic.

If such a trial is intended, it will be well to hypnotise the patient several times before the confinement, so as to familiarise her with the process, and to test what degree of anæsthesia can be induced.

Gynæcology.—The gynæcologist is justified in trying hypnotism in many cases, particularly those of ovarian pain and menstrual disturbance.

It seems absurd to speak of painful menstruation being rendered painless by hypnotic suggestion, or to think that in cases of amenorrhœa or menorrhagia any good could follow hypnotism.

Nevertheless, I have seen cases where such benefits followed hypnotic treatment. I leave it for others to say whether *post hoc* equals *propter hoc* or not.

Lunacy.—The alienist is certainly justified in trying hypnotism to his heart's content.

Lunatics are hard to hypnotise, but patience will do wonders. Voisin, of the Salpêtrière, says he succeeds with 10 per cent. of his patients; and Forel, of Zürich, hypnotised 14 out of the first 33 lunatics he tried. The results obtained by these and other gentlemen are encouraging.

Moral ailments.—Here there is a large field where, I think, hypnotism may be tried, including inebriety, morphinomania, cocainomania, kleptomania, masturbation, &c.

Surgery.—Now let us turn to the surgeon's domain. Before the introduction of chloroform, ether, or methylene bichloride, hypnotism was, to some extent, employed as an anæsthetic.

Braid, Liston, Velpeau, Broca, and others performed operations painlessly by the aid of hypnotism. Some of these were serious, such as thigh amputations.

Esdaile, in Calcutta, left a record of over 200 operations painlessly performed, including lithotomies and the removal of immense tumours in cases of elephantiasis.

But nobody now claims that hypnotism should be generally employed as an anæsthetic; but, if I knew beforehand that a

patient could be deeply hypnotised so as to be anæsthetised, I would much prefer hypnosis to chloroform or other anæsthesia.

Where it can be employed, it presents several great advantages, the chief being, that whereas chloroform has slain its thousands, hypnotism has never been the cause of any fatal accident.

Another striking advantage is, that while a patient under the influence of chloroform lies a helpless, unconscious, and unwieldy mass, a hypnotised patient will obey your every wish—turning from side to side, raising or lowering his limbs as desired, &c.

Then, again, there are cases calling for operation where even the boldest surgeons hesitate to administer any of our anæsthetics on account of cardiac or renal disease. Here, if hypnotism can be used, it is free from risk. Quite recently, Dr. A. B. Shaw, of St. Louis, was called upon to trephine in a case of traumatic epilepsy. The patient's heart and kidneys were so diseased that he dared not give chloroform. Hypnotism was tried, and the operation successfully and painlessly performed.

Putting aside, however, major operations, there are hosts of minor cases, such as teeth extraction, suturing wounds, setting fractures, &c., where, I think, hypnotism deserves a trial.

One point I have not mentioned, which is important, and very peculiar—that is, that in some cases not only can an operation be performed without suffering, but a more or less continuing analgesia can be secured by suggestion made at the time. No other anæsthetic will do this; but many cases are recorded where the after-pain of operation has been completely banished by hypnotic suggestion.

The dangers of hypnotism.—Many and direful are the pictures which are painted of the dangers of hypnotism.

It is said that it may produce insanity and crime; that the patient becomes the unwilling, but powerless, slave of the operator.

These dangers are myths to a great extent.

Cases have been published where the mind has become unhinged after hypnotism had been employed. So, also, many a man has gone mad *after* being ordered a tonic. Most lunatics have gone mad *after* being vaccinated. A gentleman committed suicide last week in Manchester *after* undergoing Koch's treatment. But is it fair, where a man comes of a long line of lunatic ancestors, or has been a notorious drunkard, or met with some crushing reverse, and then goes mad, to suppress the family history, the debauchery, and the misfortune, and pitch on the fact that once he was

hypnotised (probably by some uneducated showman or thoughtless amateur), and declare that as the cause of his insanity?

Again, granted that hypnotism has at times been criminally employed by unscrupulous persons, so have chloroform, nitrous oxide, opium, and many other useful drugs.

Safeguards are, however, here at hand, and easy of application. Who would allow a notoriously immoral man to administer chloroform or nitrous oxide to his wife or daughter? A hypnotist should be selected with as much caution.

Then, again, there is no justification for any female if she allows herself to be hypnotised without a witness, or for a medical man who consents to hypnotise her under such conditions.

The danger does not lie in hypnotism, but in the hypnotist; and it is high time that the use of hypnotism was confided to our profession alone, by right, though I think every facility should be accorded to scientists of repute to conduct hypnotic experiments for the elucidation of physiological and psychical problems.

The idea that the operator acquires any lasting power over his patients seems to have originated in the impudent assumptions of the showmen, who, to add to the mystery of their entertainments, often declare that they can control their subjects' actions and thoughts at a distance, and at any time after having once hypnotised them.

Such statements are absolutely false, and once a patient leaves the consulting room of the operator the latter cannot influence the former in the slightest degree. More than this, the hypnotist cannot re-hypnotise even a patient who has been frequently operated upon without the fresh consent of such patient.

There are still many points in connection with hypnotism to which I would like to refer, but our time is limited.

If I have said enough to induce any of you who have not tried it to give hypnotic treatment a trial, let me close by asking you to *give it a fair trial.*

When a new drug is introduced, say exalgin, for neuralgia, it is not thought sufficient to try one dose, and, if that fails, to condemn it *in toto;* neither would it be considered right to try it even fully in one or two cases only.

Yet some men think this a fair trial of hypnotism. I know one gentleman who selected as a test case what he had hitherto considered a hopeless case of insanity, and because no effect followed the attempt to hypnotise, he goes about telling his friends he has tried hypnotism, and found it an utter fraud.

Neither is it fair to try every kind of medicinal treatment in any case which seems suitable for hypnotism, and then, when the patient is *in articulo mortis*, to invoke the aid of a practised hypnotist, or, perhaps, make a maiden effort oneself, and if failure naturally follows, lay the blame on the agency, instead of its tardy or ignorant administration.

I by no means advocate the indiscriminate use of hypnotism, nor am I, in any sense, an enthusiast. I do not employ it alone in above 5 or 10 per cent. of my cases.

I am perfectly certain that anyone who takes it up as a cure-all is doomed to bitter disappointment, and that many cases of apparent cure will relapse after hypnotic as after any other treatment. But this is no reason why we should refuse to try it at all. In what proportion of our cases do we employ morphin, quinine, and picrotoxin, and do they not sometimes fail us? Yet we do not discard these drugs because we have recourse to them only occasionally, and not with invariable success.

All I claim at present is, that we qualify ourselves to practise hypnotism *so that we may test it.* If after an adequate trial, we find it of service, let us reckon it amongst our remedies. If, on the other hand, we find its claims to be delusive, let us honestly reject it.

ART. XVII.—*On the Diagnostic Value of Venous Humming Murmurs in the Neck: a Study in Statistics.*[a] By HENRY T. BEWLEY, M.D. Dub., F.R.C.P.I.; Assistant Physician to the Adelaide Hospital; and Lecturer on Medical Jurisprudence in Trinity College, Dublin.

WHEN a student I derived the idea from my teachers and textbooks that a continuous humming murmur, heard when the stethoscope is placed on the side of the neck just between the sternal and clavicular origins of the sterno-mastoid, was a valuable sign of anæmia. This idea is, I think, almost universal among students, and very prevalent among medical practitioners. However, as time went on, and as I, at hospital and elsewhere, examined a large number of necks, both male and female, I gradually grew more and more sceptical as to the diagnostic value of this phenomenon. I noticed that in some cases of anæmia no venous hum

[a] Read in the Section of Medicine of the Royal Academy of Medicine in Ireland, on Friday, March 6, 1891. [For the discussion on this paper see page 453.]

could be heard; while in many patients who were very far removed from any anæmic condition a murmur was perceived. About three years ago I read in *Virchow's Archiv.*, Vol. CVII., a paper by Dr. Reinhold Apetz, entitled "On the Significance of Venous Humming Murmurs for the Diagnosis of Anæmic Conditions"; it contained the results of the examination as to the presence or absence of venous murmurs in over 600 individuals, and the conclusions Dr. Apetz derived therefrom. Having been much interested in this paper, I resolved to investigate the subject for myself, and to examine as many persons as possible with this object.

Before referring more particularly to my statistics, let me call your attention to the differences of opinion on this subject that prevail, as set forth in some of the best known text-books. Some appear to lay a considerable stress on such murmurs: Dr. Bristowe ("Practice of Medicine") says of anæmia:—"The development of abnormal sounds in the heart and blood-vessels is of common occurrence, and highly characteristic." Gerhardt ("Lehrbuch der Auscultation und Percussion, 1890") considers that a venous hum is a sign of anæmia if it can be heard when the head is held quite straight and not turned to one side or the other. On the other hand, Dr. Hilton Fagge ("Practice of Medicine") writes concerning the various functional murmurs which may be heard in anæmic individuals:—"It is important to notice that none of these murmurs are of the slightest significance from a clinical point of view, so far as the diagnosis of anæmia itself is concerned." Dr. F. Taylor ("Practice of Medicine") says:—"The venous hum is not peculiar to anæmia, and should not be regarded as evidence of anæmia."

I could quote many more authorities on both sides, but I think I have quoted enough to show the very divergent opinions that prevail on this subject.

It is obvious that it is impossible to decide such a question as this, except by referring to a large number of cases, and drawing conclusions from them.

I will now relate the details of my investigation. In order that my paper should tend as much as possible to the elucidation of this practical point, whether a venous hum is of diagnostic value or not, and in order to avoid disturbing influences, I conducted my examinations in the following manner:—I examined only individuals who were otherwise healthy. I excluded all cases of disease, because many diseases exercise a very disturbing influence on the circulation, and so might vitiate my results; and I was

anxious to make my investigation strictly comparable to those cases in which the question arises whether an otherwise healthy individual is anæmic or not. I only examined young people between the ages of sixteen and twenty-six years. I adopted this limitation because age has a very marked influence on the frequency of occurrence of venous murmurs, and cases of different ages cannot be compared together; also because it is at this period of life that chlorosis is most prevalent. I examined all my cases in the upright position, either sitting or standing, and with their head directed straight forwards, and not turned to either side. I laid the bell of the stethoscope—an ordinary straight wooden stethoscope—as lightly as possible on the side of the neck, between the origins of the sterno-mastoid, in some cases moving it to other neighbouring parts of the neck. I divided my cases into three classes:—

(1.) *Anæmic—i.e.*, those in whom the symptoms and signs of anæmia were well marked.

(2.) *Slightly anæmic—i.e.*, those persons who, without being excessively pale, suffered from some of the symptoms of anæmia; or, who felt perfectly well but yet looked rather bloodless.

(3.) *Not anæmic.*

To estimate anæmia with scientific accuracy, it is, of course, necessary to count the corpuscles and to estimate the hæmoglobin. This I had not time to do, but was obliged to rely on the ordinary clinical tests.

I examined in all 51 young men and 149 young women—200 in all. Of these, 22 belonged to the anæmic class, 31 to the slightly anæmic, and 147 to the not anæmic.

The results of my examination were as follow:—

	Murmurs.		Per cent.
In the 22 anæmic there were - -	19	=	86·4
„ 31 slightly anæmic - - -	27	=	87·1
„ 147 not anæmic - - - -	85	=	57·9

Dividing the not anæmic class into males and females, I found that a rather larger proportion of not anæmic young women had murmurs than young men; but the difference was not very great.

	Murmurs.		Per cent.
In 104 not anæmic females - - -	64	=	61·5
„ 43 „ males - - -	21	=	48·8

What conclusions can be derived from these statistics?—

(1.) We will see that murmurs are more common in anæmic conditions than when there is no suspicion of anæmia.

(2.) More than half of those persons who are not in the least anæmic have a venous hum in the neck.

(3.) From this it is evident that the presence of a venous hum in the neck in any individual case is a matter of no diagnostic importance whatever.

Another question arises—If the mere presence of a murmur is a matter of no importance, can we nevertheless draw any diagnostic conclusions from its acoustic characters—*i.e.*, from its loudness? Some murmurs are excessively loud, even roaring in their character. Are these murmurs, at least, peculiar to anæmia? My statistics would tend to prove that they are not. I noted down with regard to each murmur I heard whether it was faint, loud, or medium. Of the very loud murmurs I found—

	Murmurs.		Per cent.
In 22 anæmic - - - - -	3	=	13·6
„ 31 slightly anæmic - - - -	5	=	16·1
„ 147 not anæmic - - - -	7	=	4·8

These loud murmurs are therefore much more common in anæmic than in not anæmic states, but they are not peculiar to anæmia, and in individual cases no positive conclusion can be drawn from them. I noted in several cases that the individuals in whom I heard extremely loud murmurs were peculiarly rosy and full of blood.

I have not been able to compare Apetz's figures with my own, because his method of investigation was not quite the same as mine. It is, however, important to observe that his conclusions are identical with mine.

I must add that I do not lay any weight on my exact figures. On the contrary, I think my percentage of murmurs in the anæmic and slightly anæmic classes is probably too high. To gain absolutely reliable figures it would be necessary to examine a very much larger number of cases than I have been able to do. I do not think, however, that my conclusions are at all invalidated by these possible inaccuracies.

ART. XVIII.—*Puerperal Fever: its Nature, Prevention, and Treatment.*[a] By JOHN W. BYERS, M.A., M.D.; Physician for Diseases of Women to the Royal Hospital, Belfast; Physician to the Belfast Hospital for Sick Children; Examiner in Midwifery, and in Diseases of Women and Children, to the Royal University of Ireland; Fellow of the Obstetrical Society of London, and Fellow of the British Gynæcological Society.

To those who are actively engaged in obstetric practice, as the majority of the members of this Society are, there is no subject of greater importance than puerperal fever. Although childbearing is a natural process, it is unfortunately a very dangerous one, as Dr. Duncan pointed out so far back as 1870, when he came to the conclusion that "not fewer than 1 in every 120 women, delivered at or near the full term, die within the four weeks of childbed." While a certain number of women die at the time of their confinements from hæmorrhage—placenta prævia, accidental, and *post partum*—the great cause of the mortality is, undoubtedly, puerperal fever. It is difficult to state with anything like accuracy the proportionate number of deaths due to this malady, but it is probable that about 65 to 75 per cent., as given by Cullingworth, of all the deaths from childbirth are due to puerperal fever. Through the kindness of Dr. Grimshaw, Registrar-General for Ireland, I have been supplied with statistics, which show that during the years 1885–1889 inclusive, 2,439 deaths occurred in Ireland from parturition, while of these 1,631 were registered as being due to puerperal fever—that is, about 66 per cent. Further, everyone knows that amongst those who recover, chronic ailments—in the form frequently of peri- or para-metritis—are left as a direct legacy of puerperal fever, which may for years render those affected chronic invalids, and may indeed in some cases require operative interference for their cure, especially when the appendages are at fault. The experience which I have gained at the clinic for diseases of women at the Royal Hospital has brought prominently before my attention the fact that many of the chronic ailments of women are traceable to some feverish attack which set in after parturition.

There are two other circumstances which tend to make the consideration of puerperal fever of the utmost importance—the loss and calamity it brings, not only on the family afflicted, but on

[a] Read before the Ulster Medical Society, on Friday, April 3, 1891.

the medical attendant. Speaking of cases of puerperal fever, Dr. Oliver Wendell Holmes said—"No tongue can tell the heart-breaking calamity they have caused; they have closed the eyes just opened on a new world of love and happiness; they have bowed the strength of manhood into the dust; they have cast the helplessness of infancy into the stranger's arms, or bequeathed to it, with less cruelty, the death of its dying parent. There is no tone too deep for regret, and no voice loud enough for warning. The woman about to become a mother, or with her new-born infant on her bosom, should be the subject of trembling care and sympathy wherever she bears her tender burden, or stretches her aching limbs."

Of the annoyance and loss a case of puerperal fever, when it occurs in his practice, brings to a medical man, no one—unless he has had such an experience—can truly realise. In no other department of medical practice does a doctor occupy such a position. So long as his patient is ill of this malady, he has not only all the anxiety which the knowledge of its frequent fatality constantly brings him, but from the very nature of the disease his attention to a case must be unwearied, "in season and out of season," and so long as his patient is ill all his other obstetric engagements must be cancelled. The lot of the obstetric physician in such circumstances is truly different from that of his colleagues, the pure physician or surgeon.

I propose this evening to consider three points:—

1. The nature of puerperal fever.
2. The prevention.
3. The treatment.

1. *Nature of Puerperal Fever.*—It would indeed be a profitless study to consider the early views that have been held as to the nature of puerperal fever. One fact, however, is worth noting, and that is that between the years 1854 and 1874 more than 20,000 pages of material, as pointed out by Fordyce Barker, had been published on the subject. Before speaking of the view which most obstetricians hold at present as to the nature of the disease, it will be worth while to look at a few of the theories which until recent times had many supporters.

1. The view has been held by many English obstetricians that the poisons of the zymotic fevers may, when communicated to a puerpera, produce in her a disease indistinguishable from puerperal fever. This idea is brought forward especially in reference to

scarlatina, so that it is a current opinion in lay and medical circles not only that scarlatina, when it is conveyed to a lying-in woman, may cause puerperal fever, but that it is almost invariably fatal. This theory is supported by Dr. Braxton Hicks, but it is worth noting that the cases recorded in his paper—"A Contribution to our Knowledge of Puerperal Diseases"—were, as he has stated with his usual fairness, seen in consultation, and were in no way a record of private practice. Further, these cases were observed—and this fact, as I shall afterwards point out, is of the utmost importance—before the era of antiseptic midwifery.

Dr. Galabin is another upholder of this opinion, but the fact that he attaches considerable weight to the evidence in its support from the "Collective Investigation Records" does not, in my opinion, strengthen his position—as well as Dr. Barnes, who says: "If we can prevent scarlatina only we shall diminish puerperal cases by at least one half." Dr. Playfair has suggested a slightly modified theory. He thinks scarlatina may in one puerpera produce a perfectly natural attack of scarlatina, running a normal course, while in another it may produce a disease quite indistinguishable from puerperal fever. In the one case he believes the poison is contracted through the ordinary channels, while in the other it is conveyed directly to the genital tract by the hands of the accoucheur or midwife, infected linen or sponges, or the like. Now let me state the evidence on the other side of the question, or, in other words, in favour of the opinion which I hold myself, that scarlatina, when it attacks a puerpera, produces scarlatina, and not puerperal fever.

1. It is contrary to all modern pathology that one disease should be transformed into another. Measles causes measles, smallpox smallpox—why then should scarlatina differ from the other zymotic diseases, so that in one person it produces scarlatina, "breeding true," while in another it gives rise to puerperal fever?

2. Dr. Duncan has shown the extremely important fact that when scarlatina prevailed in London, killing 250 a week, there was no increase of puerperal fever.

3. Dr. Cayley, a very high authority, from his connection with the London Fever Hospital, believes that the two poisons—that of scarlatina and puerperal fever, are quite distinct—and that the one does not produce the other; but further, he thinks the cases of puerperal scarlatina admitted to the Fever Hospital were not scarlatina, but—and this is most noteworthy—cases of septicæmia with a rash.

4. The most conclusive evidence on this subject will be found in the classical papers of Dr. Boxall, giving an account of an epidemic of scarlatina in the General Lying-in Hospital, London. Sixteen women were attacked, all of whom recovered without any signs of septicæmia. Forty cases were exposed to the infection, but did not contract the disease, and three hundred patients were confined in the hospital during the epidemic. He gives tables showing that the presence of the scarlatina poison in the hospital exerted no appreciable effect on other patients lying-in during the same period. In this hospital the most rigid antiseptic precautions were used, and this series of cases, the largest yet recorded, shows that scarlatina given to a lying-in woman produces scarlatina and nothing else, and I think it is a fair deduction to draw, that if antiseptic precautions were rigidly used, the so-called puerperal scarlatina, which is so fatal and which apparently is simply puerperal fever or septicæmia, with a red rash, would disappear. Dr. Meyer (*Zeitsch. f. Geb. und Gyn.*, Band XIV.), in giving an account of an epidemic of scarlet fever among lying-in women in Copenhagen, confirms Boxall's conclusions, and shows that scarlatina does not give rise to puerperal fever, and that the popular idea, that scarlatina in a puerpera is a very serious disease with a bad prognosis, is not borne out by his cases. Further, it would seem that when antiseptic precautions are used, scarlet fever in a puerpera is not such a severe or fatal disease as the public think. A good deal of the mistaken idea on this subject has apparently arisen from observers attributing an attack of puerperal fever to scarlatina when it was in the neighbourhood, and when they could find no other source for the disease. I am sure many of those present with large obstetric experience have attended women at their confinements, when in the same house other members of the family were suffering from scarlatina, and yet the patients have not been influenced by the disease, or if they have taken scarlatina, the disease has run the ordinary course of the malady, and has in no way interfered with the lying-in condition.

5. The ablest German obstetricians, Spiegelberg, Winckel, and Olshausen, do not believe in scarlatina causing puerperal fever. Winckel, in his text-book, says (speaking of scarlatina): "Its appearance is extremely rare, and those writers who maintain that puerperal women are attacked more frequently by scarlatina than other adults, and that it often occurs epidemically among them, have had to deal, not with primary scarlatina, but with cutaneous

inflammations accompanying septic puerperal diseases. The development of scarlatina by contagion is so undoubted, and the rule that it only attacks human beings once is also so unquestioned, that in such cases among puerperal women who have already had the disease, and in whom contagion can be positively excluded, we must never think of scarlatina, but only of traumatic or symptomatic forms of dermatitis, which have only the colour in common with scarlatina."

II. With reference to the relationship of erysipelas to puerperal fever, it is probable that cellular or phlegmonous erysipelas—a disease which affects the cellular tissue, and in the affected parts of which micrococci are found—is really a variety of puerperal fever, while the ordinary form of eryispelas, which is cutaneous, the contagion of which is carried by the atmosphere, and which is distinctly margined, and which is caused by a distinct species of microbe (the erysipelas coccus of Fehleisen), produces in puerperal women erysipelas and nothing else. We have all, I am sure, met with cases of this nature.

III. The view that puerperal fever, when it occurs, is in the nature of an epidemic, or that conditions of the atmosphere or of soil have anything to do with its prevalence, must be given up.

Where large numbers of women die of this disease, they die, as Williams and Champneys have said, either in a hospital, in the practice of a nurse, or midwife, or doctor. As to the soil, it occurs, as Hirsch has pointed out, on high and low, dry and damp localities, upon the sea-coast and in the interior. Some say it is more frequent in winter than in summer, which they attribute to want of ventilation, but in lying-in hospitals, where rigid antiseptic precautions are employed, neither season, situation, nor soil has any effect in its production.

Having said so much, principally to show what puerperal fever is not, we may now state what, according to modern views, it is. Puerperal fever then, I believe, is a wound disease, a traumatic fever, or blood-poisoning, occurring in a lying-in woman, and due to the action of micro-organisms which enter from without. These are of different kinds, and it is probable that the varieties of the disease, as well as the diversity in the pathological changes produced in its course, may be due to difference in the organisms. The microbes are specially of the coccus order, and very frequently the streptococcus pyogenes is met with. We all know how, in process of parturition, wounds may occur in any part of the genital tract—

as the cervix, the portio-vaginalis, the perinæum, and the vulva—and in difficult cases bruising of other parts of the canal is apt to set in. It is now well proven that parts of the body whose vitality is lowered by bruising are very liable to be attacked by micro-organisms, and in the lying-in woman another factor is added in the presence of the lochial discharge, which offers additional facility for the growth and development of bacteria. These organisms may, however, be reduced to two principal classes—those which act by causing putrefactive changes in any bruised tissue, piece of membrane, blood-cut, &c., that they may come in contact with in the genital tract, and those which are purely septic, and which, entering through a wound, make their way into the blood and tissues, and in their growth poison the patient. Others cause the so-called diphtheritic or puerperal ulcers, others phlegmonous erysipelas, and others spreading or traumatic gangrene. These local conditions are fortunately rarely met with now, but when they do occur, the system is poisoned from them. Our knowledge of those bacteria in puerperal fever is still far from complete, but it is said they are not present in the uterine secretions, and that while in the upper part of the vagina they are few, they are common in the lower part. Hence the great importance of wounds of the inferior part of the parturient canal, as it is through them the poison enters the system. There are three ways in which blood-poisoning in puerperal fever is prone to manifest itself :—

1. If a piece of membrane or placenta is retained, and the microbes of putrefaction gain access, in their multiplication they give rise to a chemical poison which, when absorbed into the blood, causes a constitutional disturbance, to which the term sapræmia, or septic intoxication, has been given. This is the class of case in which an antiseptic uterine douche is so frequently attended with such immediately good results.

2. When, however, the virulent septic organisms enter the blood through a wound, we get that alarming and often rapidly fatal condition to which the term septicæmia has been applied. Whether the non-pathogenic microbes (those of putrefaction) may, under certain circumstances, or in successive generations, be converted into the virulent septic organisms which give rise to septicæmia, is a debatable point not yet settled.

3. In certain cases a uterine phlebitis is set up, and then the micro-organisms by their action on this unhealthy pus give rise to a specific poison which, when absorbed into the blood, occasions a

disease attended with recurring rigors, and the formation of metastatic abscesses in various parts of the body; this we call pyæmia. The various conditions known as puerperal metritis, peritonitis, para- and perimetritis are due to the direction in which the various morbid processes, set up by the action of the microbes, may spread.

In a paper which I read at the Dublin meeting of the British Medical Association, August, 1887, and from which I now quote, I expressed "the view that all cases of puerperal fever are in their origin heterogenetic—that is, the infection comes from without; but of course many hold that in certain cases the disease may originate within the patient's body, or be autogenetic. This type of case is well described by Dr. Macan in his Report of the Rotunda Hospital for 1883—'In cases of auto-infection, the woman is most frequently a multipara, the labour long, and perhaps complicated with a dead and putrid fœtus, or with fibrous tumour or cancer of the uterus, or there has been *post-partum* hæmorrhage from a badly contracted uterus, followed by the formation of clots, or the retention of portions of the membranes or placenta. The uterus being badly contracted, and the abdominal walls very relaxed, air enters the vagina, and decomposition of the contents of the uterus is the result.' In such cases, if the fluid does not get away, it undergoes further decomposition, becomes absorbed, and poisons the patient; but, on the other hand, thorough drainage and washing out of the uterus with a hot 1 in 2,000 sublimate solution, if done early enough, will generally cause the bad symptoms to disappear. But even in such cases, may the cause not come from without, the intra-uterine clots, dead fœtus, placenta, &c., forming a medium in which the micro-organisms from without find a soil in which they can rapidly grow and multiply? In support of the view that puerperal fever is a heterogenetic disease, I cannot do better than quote the following passage from one of the most brilliant writers of the American Obstetric School, Dr. Parvin—'The doctrine of autogenesis,' he writes, 'is a confession of ignorance, the creed of fatalism, the cry of despair. It is more rational when we meet with cases of puerperal septicæmia whose origin we do not know, but which have the same history as others—the source of which we can trace to an external cause, and which have the same evolution and the same infecting power—to conclude that they too come from like sources, though the connecting thread is so fine that it eludes our vision, than to erect an altar to the unknown

god of autogenesis, and imagine we have explained the mystery. Self-infection means that the house sets itself on fire, and that the powder magazine is exploded without any mischievous spark. What security can the practitioner give his patient when the foe which brings swift death is created within her, and when she kills herself? This doctrine of the autogenesis of puerperal septicæmia is, to my mind, the very pessimism of obstetric medicine. Why should the city guard its gates when the enemy can already be in the citadel and begin the battle there?' "

Since then obstetricians had become more and more agreed that the autogenetic theory must be abandoned, and Szabo in his paper (*Archiv. für Gyn.*, Band XXXVI.) has brought forward most conclusive evidence showing that the "self-infection" theory must be given up. He points out that, since the introduction of sublimate as a disinfectant into the Buda-Pesth maternity, the proportion of cases in which the temperature did not exceed 100·7° F. has been 80 per cent., while before the antiseptic era it was only 55 per cent. From this we may conclude that the employment of external preventive measures shows that the disease in the majority of cases is due to external causes. Again, he shows from statistics that in lying-in hospitals attended by students and midwives the relative number of cases attended with fever was larger when the students and midwives were present than during the vacations. If the fever is due to a poison carried from the outside this difference is clear, otherwise on the autogenetic theory it is inexplicable. Again, Szabo points out that, in maternities, cases attended with fever often occur in groups. How could they arise autogenetically? If, however, the fever is due to infection brought from without, their occurrence is easily understood. On the same ground we can explain "epidemics" occurring in the practice of one individual.

Further, Szabo shows by statistics, as I have mentioned before, that the nearer wounds of the genital tract are to the external air, the more frequent is fever; this fact cannot be explained on the "self-infective" view, but proves that it is the entry of the micro-organisms from without which causes the mischief. Such is the modern doctrine of puerperal fever. Let me, in a word or two, trace the circumstances that have led careful observers to adopt this view:—

1. In 1773 Charles White, Surgeon to the Manchester Infirmary, was the first to assert that puerperal fever was infectious, and in 1795 Dr. Gordon, of Aberdeen, published an account of an

epidemic which had occurred in that city, in which he used the following remarkable words :—"I arrived at that certainty in the matter that I could venture to foretell what women would be affected with the disease upon hearing by what midwife they were to be delivered, or by what nurse they were to be attended during their lying-in; and in almost every instance my prediction was verified."

2. In 1847 Semmelweis, the father of the modern view as to the nature of puerperal fever, taught that it was when the patients were inoculated with the poison engendered by the decomposition of organic material that they developed puerperal fever. He proved that at the Vienna Lying-in Hospital, where he was assistant, puerperal fever ensued in the practice of those physicians who, coming fresh from the anatomy rooms, washed their hands in the ordinary way in soap and water, while no fever, or but few cases of disease, occurred in the same hospital when he made a rule that the physicians should wash their hands in a solution of chloride of lime. This was the first antiseptic used in midwifery. Anyone who wishes to read an account of one of the most interesting figures in obstetric medicine, should see Dr. Dukas' articles in the *Lancet* for July 31st and August 7th, 1886.

3. In 1850 Sir James Simpson, with extraordinary genius and foresight, wrote a paper "On the Analogy between Puerperal and Surgical Fever," in which he compared the condition of the uterus after delivery to that of an amputated stump (Simpson's obstetrical works).

4. Then came Pasteur's wonderful discoveries, and their practical application by Lister to surgery with such extraordinary results.

5. The identity of morbid appearances in cases of puerperal fever and in septicæmia.

6. The discovery of the presence of micro-organisms in puerperal fever as in other forms of septicæmia (for literature, see *Edinburgh Medical Journal*, November, 1885, "The Pathology of Post-partum Uterus," by Dr. A. H. F. Barbour).

7. The antagonism existing between certain antiseptics (notably corrosive sublimate) and bacilli and their spores (Koch's papers).

8. Finally, and most important, the brilliant results obtained in maternities by the routine use of antiseptics. If we look at the records of the maternity hospitals in Copenhagen, Vienna, St. Petersburg, Paris, Berlin, Buda-Pesth, Dresden, the Simpson Memorial Hospital in Edinburgh, the General Lying-in Hospital

and the British Lying-in Hospital in London, the Rotunda in Dublin, and the Boston Lying-in Hospital in America, the evidence in favour of the rigid use of antiseptics is overpowering.

As is now well ascertained, the total mortality in lying-in hospitals has been reduced as low as 5 or 4 per 1,000, with an almost complete banishment of septic disturbances. It is surely a wonderful change that the condition of lying-in hospitals is now so altered from what it was formerly, when, owing to their dreadful mortality from puerperal fever, the feeling of the profession was that they should be abolished, that now the poor can be confined in them with as great, or even greater, safety than the rich in their own homes, with every luxury and attention that money can bring.

Believing, then, that puerperal fever is a wound-fever or blood-poisoning, and seeing that by the routine use of antiseptic measures the disease has been banished out of lying-in charities, where it was in former times so prevalent, and where it occasioned such a frightful mortality, I would urge, in the strongest manner I can, the employment of antiseptics in private practice. The lessons conveyed by the brilliant results in lying-in hospitals cannot be ignored, and they should certainly make those of us who engage in obstetric practice feel that our responsibility is a very heavy one. May I suggest that if in our conduct of a labour we regarded puerperal fever as in every case likely to occur, we, as well as the nurses under us, would be more careful to take every precaution to prevent its onset. All modern teaching and experience go to show that puerperal fever in the great majority of cases is a preventable disease. Accepting the view that puerperal fever is due to the action of micro-organisms, the very practical question arises, how are they carried to the puerpera? All modern teaching and experiment go to prove that the mode by which these infective matters are conveyed is the hands of the accoucheur and nurse, instruments—such as enemas, catheters, forceps, bed-pans, vaginal tubes, sponges, linen—in a word, anything that may before, during, and immediately after the confinement be brought in contact with the genital passages. As Spaeth has said, "the morbific agent is situated in the hospital, in the room in which delivery takes place." That the atmosphere is almost harmless in the transmission of the virus, let me quote for you the following words of Winckel:—"The most weighty proof of the innocuousness of the air for parturient and puerperal women is the experiment (performed by

me very often during the past twenty-five years) that when cases of infection appear, the endemic can be extinguished in a few days by the exclusion of the midwives and physicians engaged in the examinations without any other change in the maternity ward, the instruments, beds, &c. The same ward, the same room, the same bed, the same atmosphere—merely the entire cessation of examinations, with the exception of those absolutely necessary, made by a non-infected midwife under strict supervision. How can the striking result of such an experiment—which can but be made in very large institutions—be explained otherwise than on the theory that the examination of the parturient women, especially that with the finger, almost always produces the infection, that the virus is a fixed one, that the introitus vulvæ and cervical canal are the sites of infection, but that the atmosphere surrounding the puerperal women plays only a very subordinate part." The experience of the Rotunda is in the same direction.

(*To be continued*).

ART. XIX.—*Arsenic in the Early Stages of Enteric Fever.* By FREDERICK KIRKPATRICK, M.B., Univ. Dubl.; ex-President of the Royal College of Surgeons in Ireland.

ENTERIC fever having of late prevailed in Dublin, some valuable lives having been lost, and several patients having been left in broken health after a tedious recovery, it seems an appropriate time to bring the subject of this disease before the profession.

It is by no means my object to direct attention to the general treatment of enteric fever, but altogether to that which should be adopted at the very first moment we are called upon to treat that disease.

The German, the French, the American, and all our British authors, set forth in their chapters on treatment that there is no specific antidote, no possibility of destroying the typhoid poison, preventing its spread or arresting its progress. In his great work, published in 1873, Murchison says there is no specific for enteric fever, any more than for typhus; and he again remarks:—"If we can keep the patient alive a certain time the disorder will pass away." Hence the young physician learns from an imposing array of authorities that his early treatment should be one of expectancy. In consequence the time for action is lost; the depressed condition of the patient's nervous system, together with the deteriorated state

of the blood resulting from the operation of drain poison or other malarious influence, is not promptly encountered, and the inflammation of the intestinal glands, which there is the strongest reason to believe is set up at a very early period of the disease, is allowed to proceed and go on to produce ulceration and its dangerous consequences, and at best the tedious convalescence which so often supervenes.

Through the medium of this Journal I ask—Is there a well-grounded hope, is there any practical expectation that in the administration of small doses of arsenic, given at frequent and regular intervals all through the twenty-four hours, an improvement may be looked for, both in the deteriorated blood and the nervous system? That the inflammation of the intestinal glands may be promptly arrested, and moreover the distaste for all nourishment and the general derangement of the entire digestive system be favourably influenced?

In the year 1872, when Dr. Alfred Hudson was President of the College of Physicians, and I was myself President of the College of Surgeons, we were in attendance on an anxious case of enteric fever, when I thus addressed him—"Now, Dr. Hudson, we have absolutely no confidence in any of our remedies to arrest this fever. Do you not think that in arsenic we might find a remedy which we might prescribe with some confidence? We have every reason to think that inflammation is already being set up in the lining membrane of this patient's intestines;" and I quoted the first and last verses of one of Sir Alfred Power's clever sanitary rhymes:—

"There is a skin within and a skin without,
A lining skin and a covering skin;
But the skin within is the skin without,
Just doubled inwards and carried throughout.
* * * *
Good people all, take care of your skin,
Both that without and that within.
To the first give plenty of water and soap,
To the last nothing stronger than water, we hope."

Dr. Hudson replied—"Dr. Kirkpatrick, do not imagine that your proposal is original. When I had the hospital in Navan the same thought struck me upon reading the chapter on the therapeutical uses of arsenic in a work by Dr. James Begbie, Physician to the Queen, in Scotland. I treated four cases with satisfactory results, and fully intended to give a full trial to the treatment of typhoid fever by small doses of arsenic in its early stage, when a

report was spread that I was using poison with my patients, and I was obliged to cease its use."

From that time up to the termination of his successful career, Dr. Hudson was one of the physicians most frequently employed in the treatment of enteric fever, and on inquiry amongst the chief pharmaceutical establishments in the city I was informed that arsenic was prescribed by him more frequently than by the other physicians.

I have myself had a very long experience in the use of arsenic; at first during a residence of five years at Steevens' Hospital, commencing in the year 1833; then for more than thirty years as surgeon to the North Dublin Union. In using this medicine for long periods in the numerous cases of lupus, chronic dysentery, scrofulous and skin affections that presented themselves, I found that such improvemeut in the condition of the patients, in their looks and general health, attended its curative effects on their local ailments that I was led to regard it as the most generally useful of all medicines.

In conclusion, I am anxious to record a case as the most remarkable one I have ever met with or read of as to the taking of arsenic. Some years ago I was called to visit a lady in the Co. Kildare, the wife of an aged clergyman, the late Rev. Dr. Warburton. In our first interview he asked my opinion as to the value of arsenic. On my commending it, he informed me that he had been in the constant habit of taking it for forty-six years. At first it had been prescribed by Sir Philip Crampton for a bad skin affection, but as improvement did not take place he was advised to go to London, where he consulted Dr. Hunt, that great authority upon diseases of the skin, who cured him, and gave him full instructions as to the use of the medicine and the time he should continue it. After some months he got a rheumatic attack, and instead of seeking advice he sent for a fresh supply of arsenic, which cured his pains. He told me that he had never ceased to take the medicine in three drop doses of the solution from that time; taking it for a month at a time, and then leaving an interval of a fortnight. He said he felt his energy and strength to fail if he left it off for even a short time. I have had a letter from his son authenticating his father's statement, and have also seen the apothecary who furnished the frequent supplies of Fowler's solution, two fluid ounces at a time. The letter from the son stated that his father died at the age of ninety-three years, and continued to take his drops up to the last few days of his life.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Transactions of the Royal Academy of Medicine in Ireland. Vol. VIII. Edited by WILLIAM THOMSON, M.A., F.R.C.S., General Secretary; Surgeon to the Richmond Hospital. Dublin: Fannin & Co. 1890. 8vo. Pp. 535.

WE are glad to observe signs of continued and increasing prosperity in this goodly volume of Transactions. From the Report of the Academy of Medicine we learn that the number of Fellows is growing; and even the Student Associates have increased from 11 to 20. Invested savings are swelling to an extent which may ultimately prove as embarrassing as the surplus revenue of the United States, for there appears to be no outlet corresponding to the volume of the inflowing streams. We trust we shall not be deemed presumptuous if we add that the papers read in all the Sections exceed in interest and value the average of previous years. The institution of an Annual Address, to be delivered by a gentleman selected by the Council, is a decided improvement, and no one more competent than Professor Purser could have been chosen to begin the series.

The volume opens well with a paper on Morphinism, by Prof. A. W. Foot, which summarises almost everything of value which has been written on a subject of great and growing importance, Dr. Foot himself appearing in the paper less than we could wish. He gives the authorities for the rival methods of treatment of the opium habit with almost painful impartiality, and we can only surmise that he approves the *via media*—that it is only in dealing with robust patients that it is safe to withdraw the drug absolutely and at once. Of the other papers read before the Section of Medicine—all of which are good—we desire to make special mention of Dr. J. W. Moore's two papers on Angina Pectoris in the Heart-palsy of Acute Infective Diseases, and on the Dublin Influenza Epidemic, in the latter of which he slays again the oft-slain proverb—"A green Christmas makes a fat churchyard"—showing

that winter mortality varies inversely as the temperature; and of Dr. More Madden's, on the Recent Revival under New Names of some Old Fallacies bearing on Medicine.

It is, perhaps, in the Section of Pathology—in which, as a general rule, little but isolated "cases" are to be found—that the largest number of valuable original papers appears. Of the nineteen papers printed in this Section, two are contributed by Prof. Bennett—on "Typical Fractures," and on a case of United Fracture of the Base of the Skull. Mr. R. G. Patteson gives a systematic essay on the Pathology of Joint Bodies, and Dr. Bewley discourses on the Pathology of Empyema. We must mention also Mr. Ball's paper on the Benign Neoplasms of the Rectum.

The Section of State Medicine begins with a most interesting paper by Prof. Foot, on the Medical Selection of Lives for Assurance, specially important at a time when it is seriously proposed to assure lives indiscriminately, without medical examination of any kind. Far from complaining that the assurance companies are too exacting in their demands for information at present, Dr. Foot's eye—in a fine frenzy rolling—foresees a time when they "will not be satisfied without information as to the condition of the retina, the state of arterial tension, the integrity of the various reflexes (superficial, deep, cranial, organic); the nutrition of nerve-fibres and muscles as estimated by electricity, the centesimal excretion of urea, microscopical examination of urinary sediments, and a statement of the amount of respiratory capacity." When this day comes, we trust that the companies will increase their fees proportionately. This paper is full of practical hints of great value to the examiner. Dr. Foot notices the singular conservatism with which the companies cling to their belief in the existence of an "apoplectic habit," "as it is well known that there is no type of face or form characteristic of the conditions which lead to this catastrophe." On the other hand, he points out that the importance of a discharge from the ear is ignored. In the present state of medical opinion we are somewhat surprised to find the hereditary transmission of phthisis described as "undoubted and constant." The remarks on the meaning of "temperate habits" are excellent. The significance of the presence of albumen in the urine is discussed at length, and the author concludes that, unless it is clearly extra-renal in origin, albumen "should be regarded, without further question, as excluding the case from acceptance by life insurance companies." The

paper closes with the opinion that the assurance of persons suffering from damaged mitral valves "would require very great discrimination, and would be a dangerous 'practice' to inculcate among any but the most highly informed and most careful examiners."

In the same Section Mr. Conolly Norman discusses the system of boarding out pauper lunatics—a subject which will occupy the attention of State hygienists before many years have passed. He describes fully the Gheel system, with its defects and abuses, and the successful experiments which have been made in Scotland. The subject is very fully treated by Mr. Norman, and ample material supplied for the formation of opinion. We have no doubt of the desirability of the change—of giving suitable insane patients a home, instead of concentrating them in hundreds in huge barracks. Unfortunately, nothing can be done without legislation, and English legislators *nolunt leges Angliæ mutari*. It is well, however, that the question should be discussed, and few are so competent to discuss it as the author of this paper.

Before concluding we must mention two papers read in the Section of Anatomy and Physiology by Prof. Cunningham, which are of high scientific interest—on the Intraparietal Sulcus, and the Parieto-occipital and Calcarine Fissures of the Human Brain. Prof. Fraser's paper on Operations on the Brain—in which he describes his method of indicating the parts of the brain which correspond to localities on the head—is likely to be of great practical value to the operating surgeon.

Diabetes: Its Causes, Symptoms, and Treatment. By CHARLES W. PURDY, M D. Philadelphia and London: F. A. Davis. 1890. Pp. 184.

THIS volume forms one of the Physicians' and Students' Ready Reference series. It seems to us to be a rather inappreciative *résumé* of the present condition of knowledge on the subject with which it deals.

In the first chapter, from a study of the statistics of the United States, the author arrives at the conclusion that the chief climatic circumstances which conduce to the causation of diabetes are cold and altitude. The chapters on the physiology and pathology of diabetes represent very inadequately the present condition of science. In the section on symptomatology we read that diabetic urine usually contains acetone, or an acetone-yielding substance—

aceto-acetic acid; and that acetone may be recognised by its quality of changing the colour of a solution of chloride of iron to a mahogany red. We need hardly say that both these statements are incorrect. The cause of diabetic coma is believed by the author to be "nothing more nor less than ptomaines." His view is, however, supported only by theoretical considerations. For the examination of the urine some unimportant modifications of the copper test are recommended, and the phenyl hydrazine test is said to be worthy of confidence. In treatment most reliance is placed on diet. Of drugs, opium and codein are recommended. Antipyrin is considered useless or worse. Oxygen inhalations have been found useful, and, with alkalis, are recommended for diabetic coma. A number of clinical cases are recorded, and the work concludes with a chapter on diabetes insipidus.

Researches in Micro-organisms, including an Account of Recent Experiments in the Destruction of Microbes in certain Infectious Diseases—Phthisis, &c. By A. B. Griffiths, Ph.D.; F.R.S.E.; F.C.S., &c., &c. Illustrated with Fifty-two Figures. London: Baillière, Tindall, & Cox. 1891. 8vo. Pp. 360.

A book dealing with the most recent work in the morphology, in the growth, and in the chemistry of that field of vegetable biology which embraces the majority of the micro-organisms that are definitely proved to be related to morbid processes in man and the lower animals, has long been a felt want in existing medical literature. An inquirer has to search in various foreign works and periodicals for papers bearing on the different branches of science which elucidate his work, no succinct account being available in an English dress. Hence, on reading the title of the book before us we were prepared to accord it a hearty welcome, as at least a pioneer work in a hitherto unoccupied territory. We regret that our earliest feelings were not confirmed by subsequent perusal. The author, while disclaiming any desire "to trespass in the domain of the physician," being "neither physician or surgeon," yet specially dedicates "this volume to physicians, scientists, and others," in the "hope that it may prove of some utility in pointing out the value of a proper understanding of the new science of bacteriology, and its applications to pathology, medicine, surgery, and other sciences." It is with this aspect of the work that we shall have most fault to find.

The early chapters are devoted to a brief historical sketch of the origin and development of the science of bacteriology, and to a description of the necessary apparatus, of the most meagre and inadequate character—a remark which also applies to the accounts given of the methods of cultivation and staining. In the latter section the methods referred to are those of Gram, of Ehrlich-Weigert, and of Gibbes for double staining, and one for staining the spores of spore-bearing bacilli. The fault of all these sections is a common one: that, while the information given is quite unnecessary to one acquainted with modern microscopic methods, it is so brief and unsatisfactory that it could only land the beginner who tried to follow the instructions given in an absolutely hopeless muddle of failure and disgust—probably the only objects stained being the work-table and the observer himself. No reference is anywhere made to the different reactions of bacteria to methods of staining, nor does the writer seem to be acquainted with the best of all methods of staining the *Bacillus tuberculosis*—the carbol-fuchsin method of Ziehl and Neelsen—which is applicable both to cover-glass preparations and to tissues. Of the value of Gram's method in the differential staining of bacteria no hint is given. These points are to be regretted; they at once negative the book as a working manual for beginners.

Following some "general remarks concerning microbes," in the course of which their classification and forms are dealt with, we come to one of the most interesting and important chapters in the book—that, namely, on "The Distribution of Microbes"—in which the methods of their detection in air, in soil, and in water are fairly completely described. The important researches of Miquel, Pétri, Frankland, Gautier, Hesse, and others, and the results obtained, are fully detailed. It is well known, from the observations of Pétri and others, that the air of the streets yields a larger percentage of micro-organisms than the air of house-tops or of elevated parts of cities, and that relatively the number diminishes accordingly as the air of the city is left and the air of the uninhabited country districts approached.

These results have been confirmed by the author's analyses of the atmospheres of Paris, Lincoln, and London, brought before the Royal Society of Edinburgh in 1889, which tend to establish the fact that a larger number of microbes is found in the air in the summer—reaching a maximum in August—than in any of the other seasons of the year. The observations of Fischer on air

at sea, and of Pétri and Carnelley on the remarkable freedom of the air in sewers from organic life, also find recognition. We cannot do more than refer to the observations of Miquel on the microbes of water, accompanied by complete tables, and to the recent discoveries of Nicolaier and others of the presence and vital activity of various bacteria found in soil.

A large portion of the work is devoted to the alkaloids, &c., produced by bacterial metabolism, and this portion of the work we can cordially recommend as an introduction to a difficult, but increasingly important subject. Dr. Griffiths follows Gautier's division of the animal alkaloids, &c., into three groups—ptomaïns, leucomaïns, and extractives—and deals with them under these various headings. The information is sufficiently minute and is clearly given, and in most instances seems, as far as we can judge, to embrace the latest knowledge on the subject. One oversight we have noticed in connection with tetanus. The views of Brieger are there given as to the causation of this disease by the *alkaloids* tetanin and tetanotoxin, which he isolated from pure cultures of Nicolaier's bacillus. No reference is made to the work of Kund Faber, who proved the active principle to be a *diastase*, and his researches have been confirmed by MM. Vaillard and Vincent (*La Semaine Médicale*, November 19th, 1890) in an elaborate series of experiments. The concluding portions of the book are devoted to the "Biology, &c., of Certain Microbes," and "Experiments on the Destruction of Microbes." Under the latter heading a full account is given of the case of a Mr. John Snodgrass, who was treated for pulmonary tuberculosis by Bergeon's method—"anal injections of a mixture of *pure* sulphuretted hydrogen and carbon-dioxide gases"—as well as by the author's method of injection subcutaneously of a solution of natural salicylic acid. The trivial details, letters, opinions, &c., of this and other cases, which are evidently intended to appeal to the lay, and not to the professional reader, cannot fail to excite a reaction of disgust from such pseudo-scientific charlatanism. In a book dedicated to "physicians and surgeons," such matter is an insult to their intelligence and power of judgment; if meant for the general public, it is a manifestation of barefaced quackery which deserves the strongest condemnation from every right-thinking man. It is *the* blot on the book—in many other respects a useful one—to which we referred at the outset. But there are many other errors to which we might point whenever the author leaves his special fields of biology and chemistry and

ventures into the regions of medicine and pathology. In referring to Mr. Hutchinson's well-known views on the pathogeny of leprosy, Mr. Griffiths states, with a questionable regard for scientific or grammatical accuracy, "that leprosy depends in a great measure—that is to say, the bacillus had its origin—upon eating fish, especially decomposed fish, by persons in a low state of health" (p. 260). On the following page the views of Van Swieten are seriously quoted—"The syphilitic patient often dies tubercular. . . . Further, the syphilitic sufferer often gives birth to a tubercular infant." This is paralleled by the statement on p. 268, that "Bacillus tuberculosis has been proved to enter the body" by "heredity!" We are inclined to echo Dogberry—"Flat burglary as ever was committed!" We should also like the authority for the statement that "the sweat of phthisical patients often contains tubercle bacilli." But enough. We regret to have to condemn a book that contains much of use and interest, which is not elsewhere so easily available. The passing madness of consumption cures is one of periodic outbreaks, and we trust that, when Mr. Griffiths next wishes to raise a shout of public expectancy, he will address himself to the public in his true guise, and not under the cloak of a book addressed to "physicians and scientists," who have ever set their faces, in these countries, at least, against the countenancing, however indirectly, of quackery and charlatanism.

Twelve Lectures on the Structure of the Central Nervous System, for Physicians and Students. By DR. LUDWIG EDINGER. Second Revised Edition. Translated by WILLIS HALL VITTUM, M.D. Edited by E. EUGENE RIGGS, A.M., M.D. Philadelphia and London: F. A. DAVIS. 1890. Pp. 230.

OF the numerous works which have recently been published dealing with the minute anatomy of the nervous centres, there is none which combines shortness, completeness, and clearness to such a degree as does the volume before us. Dr. Edinger's lectures are not the work of a mere compiler, but contain the results of a vast amount of original investigation, and show in every page the critical acumen which comes of a thorough practical acquaintance with the subject of which they treat. The clearness and pointedness of the style, and the beauty and demonstrativeness of the numerous original drawings with which the text is illustrated, have made the work at once most popular among

anatomists and neurologists. It is, therefore, with great pleasure that we call the attention of our readers to this translation, which will tend, doubtless, to still further popularise Dr. Edinger's book.

The translator and editor have done their work well; and although a good deal of the charm of style possessed by the original text is lost in the translation, yet still the English is good and intelligible, which is more than can be said for a good many American translations.

The 133 figures are well reproduced, and there is a good index. The work is one which will be found most useful by all those who take an interest in the nervous system either in health or disease, and as such we most cordially recommend it to our readers.

Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by J. Batty-Tuke, M.D., and D. Noël Paton, M.D. Vol. III. Edinburgh and London: Young J. Pentland. 1891. Pp. 304.

This volume contains thirteen papers, all of value, and some of very great interest.

The first is on the "Pharmacology of Morphine and its Derivatives," by D. B. Dott and Ralph Stockman. The following is the summary of the work, as given by the authors:—

"I. The methyl (codeine), ethyl (codethyline), and amyl (codamyline) ethers of morphine form a group of substances having exactly similar actions. In all, the same hydrogen atom has been replaced in morphine by an alkyl radical; they are, therefore, substitution derivatives. It seems to be a matter of indifference which radical is introduced, so long as it replaces the same hydrogen atom in morphine. In all, the narcotic action of the morphine is much diminished, the tetanising action and the paralysing action on motor nerves are increased, while the lethal dose (on account of the greater tendency to convulsions) is much smaller.

"The action is, however, of essentially the same nature as the morphine action; the same parts of the central nervous system are affected, and in the same way as by morphine, but not in the same degree. This is what one would expect from chemical considerations; for, in making these substances no profound change has been effected in the morphine molecule, but simply an alkyl radical has been introduced into one of the outlying groups which compose it.

"II. Acetyl, diacetyl, benzoyl, and dibenzoyl morphine form a group of substances having exactly similar actions. In them one or both of the hydroxyl hydrogens of morphine have been replaced by an acid radical.

"Comparing them with morphine, their action is the same in kind, but differs in degree. Their tetanising power is much greater, while their narcotic action, although visible after smaller doses, is not nearly so profound. Increase of dose, instead of deepening the narcosis, brings on tetanus.

"Comparing them with codeine, they induce an equal narcotic effect (rabbits) with about one-tenth of the dose; while a dose about three times larger is necessary to induce tetanus. Their depressing action on motor nerves is about the same.

"It seems quite indifferent which radical is introduced, and whether one or both of the hydroxyl hydrogens are replaced. Just as with codeine and its analogues, no great change has been made in the morphine molecule, but simply in the outlying hydroxyl groups.

"III. In morphine-sulphuric acid and nitroso morphine the radicals HSO_3 and NO replace the hydroxyl hydrogen atoms. The narcotic action of morphine is weakened, but qualitatively the effects remain the same.

"IV. Chlorocodide and trichloromorphide are chlorine derivatives. In the former Cl replaces the OH of codeine; while in the latter both hydroxyl groups and, in addition, one H atom of morphine have been replaced by 3Cl.

"They retain the characteristic action of morphine on the nervous system, but are, in addition, marked muscle poisons.

"V. In methocodeine two methyl molecules have been introduced into morphine, one of which replaces a hydroxyl hydrogen atom, while the other replaces an H in the body of the morphine molecule. This completely alters the character of the action, as methocodeine has the action of a muscle poison (like apomorphine).

"VI. Methyl-morphium chloride and methyl-codeium sulphate are addition products, formed by adding on methyl chloride and methyl sulphate respectively to the morphine or codeine molecule. The action is not profoundly altered by the chemical change. The paralysing action on motor nerves is considerably increased, and the narcotic action is lessened, but qualitatively the effects on the animal organism remain similar to those of morphine or codeine.

"The chemical change made in the intimate structure of the morphine molecule has not been profound; there has been simply the addition of a radical, and hence one could scarcely expect the action to be much altered.

"VII. Other morphine and codeine derivatives, which have been examined by other investigators, seem to retain essentially the morphine action.

"VIII. With regard to morphine, it seems certain that, so long as the chemical changes are restricted to what may be called the outlying groups of the molecule, very little alteration takes place in the physiological action.

"IX. The change which does take place does not depend so much on the substituting body as on what part of the molecule is substituted. The substituting body, however, exerts some influence.

"X. When a change is made in the kernel, or ground-work, of the molecule, then the action is much more profoundly altered."

The second paper is a "Report on the Excretion of Balsams in the Urine," by Ralph Stockman, M.D. The experiments were made on rabbits and men, and were limited to the four pharmacopœial balsams—namely, balsam of Peru, balsam of Tolu, prepared Storax, and Benzoin. It was found that medicinal doses of these substances did not cause irritation of the kidneys, and that they may be safely administered without fear of producing nephritis. In some, at least, of the cases where albuminuria has been supposed to follow their administration a resinous body (soluble in alcohol) was mistaken for albumen.

The third paper is entitled "Contributions to the Physiology of the Uterus, and the Physiological Action of Drugs upon it," by T. Arthur Helme, M.D. The experiments were made on the excised uterus of the sheep. The organ was placed in a moist chamber, and an artificial circulation of defibrinated sheep's blood was maintained, while the movements were recorded graphically. The uterus, whether virgin, pregnant, or puerperal, underwent peculiar, but regular, peristaltic movements, which, if the circulation was maintained, persisted for hours, and were, therefore, independent of the extrauterine nerve centres. The movements consisted in a wave of contraction travelling downwards, and in a peculiar coiling movement by which each uterine horn approaches the other and rolls itself up into a coil. "After the contraction has reached its height the horns unroll themselves in reverse order, and, at the same time, the circular fibres of the uterus become relaxed."

It is considered most probable that the contractions are due to an inherent rhythmic function of the muscular fibres; and the relaxation is attributable also to the muscular fibres, either from elastic reaction or active contraction in another plane.

During contraction the muscular tissue of the uterus becomes anæmic, differing thus from a striped muscle, in which the circulation is increased during contraction.

In the sheep's uterus contraction of one segment does not influence the circulation in the segments adjacent. The same is probably true in the human uterus, and hence the relaxation of

the cervix during labour is not assisted by the congestion supposed to be caused by the contraction of the fundus.

From a study of the action of heat and cold on the uterine movements and on the circulation the following conclusions are drawn :—

"*Hot water douche*—120–125° F., short duration.—Strengthens the rhythmical movements ; may be used in abortion, induction of labour ; inertia uteri, 130° F. and upwards. 120° F. and downwards, long duration, produces diminution in movements and improves circulation ; may be used in dysmenorrhœa and other pathological conditions.

"*Cold water douche*—50° F., short duration.—Produces a long-continued contraction ; may be used in hæmorrhage—*e.g.*, *post partum*. 50° F., long duration, produces violent contraction, followed by paralysis ; has also general depressing action by abstraction of body heat ; not to be used."

It was found that Bonjean's ergotin, in small doses, added to the blood improved the rhythmical action of the uterus. In larger doses it strengthened and prolonged the rhythmical movements. In very large doses the intensity of the individual contractions was increased, their duration markedly prolonged, while the rhythmical action was still preserved—*i.e.*, there was no tendency to cause a true tetanus of the uterus.

The effect on the circulation was variable ; this was due to the antagonistic action of ergotinin and sclerotic acid—the former raising the blood pressure and hastening the flow, the latter having the opposite actions.

Tanret's ergotinin was found to have absolutely no effect on the uterine movements, while it slightly increased the rate of blood flow.

Simpson's solution of ergotin (consisting of ergotin, ʒ ii. ; water, ʒ vi. ; chloral hydrate, gr. iii.) is much used, from its supposed keeping power. This was found to be much less than is supposed. A preparation four weeks old was found to be inert ; and the pharmacopœial liquid extract of ergot taken from the bottle used in the gynæcological wards of the Edinburgh Infirmary was also found to be inert.

Chloral hydrate was found to powerfully dilate the blood vessels and increase the blood flow, and to gradually paralyse the muscular tissue of the uterus, so as to entirely inhibit all rhythmic contraction ; reaction to hot and cold stimuli remains for a time, but gradually disappears. When normal blood is substituted for that

containing chloral, the effect passes off; reaction to cold soon returns, and ultimately the rhythmic automatic movements. Camphor was found to resemble chloral in its effects.

This valuable paper, the practical importance of which is evident, is illustrated by three large plates, showing the modifications of the uterine movements and the variations in the circulation.

The next paper, on "The Nature and Varieties of Leucocytes," is by G. Lovell Gulland, M.D. The author of this elaborate and very interesting essay holds the view that "a leucocyte is a unicellular organism, which in the midst of the vertebrate tissues retains the character and habits of a protozoon." It is not implied that the leucocyte is in any sense a parasite, but that, while the tissue cells become specialised and restricted in the number of their functions, a certain number of cells escape this specialisation, and retain the character and habits of their protozoan ancestors.

Leucocytes are never converted into erythrocytes or red corpuscles. They are essentially the same, no matter where or in what form they appear. Daughter cells, or young leucocytes, stationary leucocytes, wandering leucocytes, are described, and certain degenerated forms. Division of leucocytes is believed to occur always by mitosis.

This paper is illustrated by a plate, and is accompanied by a good bibliography.

The next paper is by the same author, on the "Development of Adenoid Tissue, with special reference to the Tonsil and Thymus." The stimulus to the formation of these organs is supposed to be the ingrowth of epithelium into the subjacent connective tissue. This causes condensation of the connective tissue, and excites a certain amount of irritation, which produces a greater abundance of connective tissue nuclei, and a fine meshwork of fibres, which acts as a trap or net to catch and hold the leucocytes brought by the blood. A good plate illustrates this paper.

In the next paper Dr. Charles Kennedy records a case of "Cystic Disease of the Liver and Kidneys," in which the diagnosis was made a year before death, from the presence of a tumour in each flank, polyuria, and only slight albuminuria. The cysts seemed to be due to fibrous obstruction of the ducts of the liver and efferent tubes of the kidneys. The frequency with which both liver and kidneys are affected makes a mere coincidence improbable, although the relationship between the diseases of the two organs is difficult to explain. Two plates accompany this paper.

In the next paper we have a long and laborious report "On the Composition, Flow, and Physiological Action of the Bile in Man," by Dr. Noël Paton and John M. Balfour. The observations were made on a woman, fifty-one years of age, on whom cholecystotomy was performed for impacted gall-stone, and are probably the most complete and valuable which have as yet been published. The following are the author's conclusions:—

"1. The amount of the bile secreted varies greatly under the influence of many different factors.

"2. The introduction of biliary constituents within the alimentary canal in moderate quantities has not so considerable an effect in increasing the bile-flow as experiments on dogs would indicate.

"3. In all probability the prevalent ideas in regard to the quantity of bile secreted, and certainly in regard to the amount of solids produced, are much too large. In considering the question of the amount of bile re-absorbed, this becomes a matter of importance.

"4. In man the meals usually taken appear to have no immediate effect on the flow of bile or the amount of solids produced.

"5. Throughout the twenty-four hours the flow of bile is irregular, but is usually highest about the middle of the day, lowest in the early hours of the morning.

"6. The greatest amount of solids is produced in the liver during the night. This increase is due to an augmented production of the organic constituents, and chiefly of the essential constituents of the bile. The soluble inorganic salts remain fairly constant.

"7. The amount of fluid taken has a notable effect on the flow of bile, and this may account for the increased excretion of bile during the day, and for the diminution in the percentage of solids.

"8. The activity of the metabolism has a distinct effect on the amount of bile solids produced, but no effect on the flow of bile.

"9. Fever has a marked and immediate influence, not only on the amount of bile secreted, but chiefly on the amount of solids produced. The diminution in the solids is due mostly to a fall in the essential constituents of the bile, and is not accompanied by any increase in the secretion of mucin. The inorganic salts do not participate in the diminution.

"10. Various drugs seem to influence the bile-flow, and of these salicylate of soda and calomel appear to be active, ox-bile less markedly so.

"11. The bile plays a most important part in the absorption of fats, though a considerable quantity of fat is absorbed even when bile is excluded from the intestine.

"12. Bile has no marked action on the digestion and absorption of proteids.

"13. The absorption of carbohydrates is not interfered with when bile is excluded from the intestine.

"14. The pressure under which the bile is secreted is undoubtedly much higher than the blood pressure in the capillaries of the liver."

The bile is to be looked on more as an excretion than as a digestive secretion, and the liver has closer relationships with general metabolism than with alimentary processes. So, while health can be perfectly maintained when the bile is directed to the outside of the body, any interference with the general metabolism of the liver at once produces serious disturbances. Numerous analytical tables and a chart are appended to this paper.

Dr. Noël Paton next records "An Experiment on the Influence of Muscular Work on the Proteid Metabolism of the Animal Body." He finds that exercise does cause some increase in the decomposition of nitrogenous substances; but that this will not account for more than 35 per cent. of the additional work performed. Short experiments, such as the classical experiment of Fick and Wislecenus, are valueless, as the increased excretion of nitrogen may not occur for two or three days after the performance of the work. The recent experiments of Argutinsky and Krummacher are criticised, and shown not to justify the conclusions drawn from them.

The next paper is on "The Nerve Endings in the Labia Minora and Clitoris, with special reference to the Pathology of Pruritus Vulvæ," by J. C. Webster. The author finds in the labia minora Pacinian corpuscles, Krause's end-bulbs, Wagner and Meissner's tact-corpuscles; while in the clitoris are found Meissner's corpuscles, end-bulbs, Pacinian corpuscles and Krause's genital corpuscles. In the labia minora sweat glands exist, an additional proof that the part is skin, not mucous membrane. In pruritus vulvæ, in which the itching is limited to the clitoris, prepuce, and upper part of the labia minora, excision of the affected parts is recommended, and was practised with success. The anatomical changes found were a fibrous change of the nerve structures and inflammatory irritation of the connective tissue. These changes are illustrated by a plate containing five figures.

In the next paper Dr. Berry Hart gives a description of "The Anatomy and Mechanism of Early Abortion," founded on an examination of five specimens. Two plates are appended to this paper.

We then have a paper by J. C. Webster on "An Improved

Method of Preparing Large Sections of Tissues for Microscopic Examination." This is the paraffin method. So far as we can see, the improvement consists in using naphtha instead of chloroform or xylol for preliminary soaking, for dissolving the paraffin, and for making a solution of the balsam. The sections are fixed to the slide by Schällibaum's method with collodion and oil of cloves. They are subsequently treated with absolute alcohol and oil of cloves, which must dissolve the fixing substance. We are not told how this difficulty is overcome.

Perhaps the most interesting and suggestive paper in the volume is that by Drs. Sims Woodhead and Wood on "Bacterio-Therapeutics." They found that rabbits could be made immune to anthrax by inoculation of sterilised cultures of Bacillus pyocyaneus. It would be impossible for us to follow the authors through their reasonings, founded on these experiments and others of like nature. Their paper is one, however, which we would most strongly recommend to every one interested in the general pathology of infective diseases.

The last paper is by Dr. Wood and Mr. Ross "On the Influence which the Process of Inflammation Excites in the course of Infection, as exemplified in Anthrax and Erysipelas." In anthrax only three cases (rabbits) were favourably influenced by inflammation excited at the point of inoculation. In the others (twenty-seven in number) the result was more unfavourable than without inflammation. The effects of inflammation are twofold—(1) Increased circulation which would tend to wash away the toxin, and, if the cells were only stimulated to increased activity, the result would be favourable. (2) But, if the cells were lowered in their vitality, they would be made less resisting, and the effect would be to aid the infection and make the disease more virulent.

In erysipelas it was found in men that a ring of inflammation excited by tincture of iodine, applied well in advance of the disease so as to be outside the zone of multiplication of micrococci, acted as an effectual barrier in most cases. Arguing from these and other considerations, the conclusion is arrived at that the local inflammatory action is here, not as in anthrax, merely an indication that the tissues are able to react on the microbe, but that the inflammation does, *per se*, exert a beneficial action, due partly to the increased circulation washing away the toxin, and partly to the relatively increased supply of oxygen which favours the tissues more than the micrococci.

In conclusion, we would congratulate the Edinburgh College of Physicians on the great value of the work which is turned out year by year from their laboratory.

We have on a previous occasion expressed a hope that our own Colleges might see their way to founding a research laboratory, something on the plan of those established in Edinburgh and London. There are plenty of men among us who would take advantage of the opportunities for work which such an institution would afford, and which are not afforded by the laboratories of our medical schools, devoted as they are to teaching purposes. We can, however, hardly expect much from Bodies who show such an inappreciation of the most rudimentary requirements of medical study as our Colleges have done in the regulations of their Conjoint Scheme. It will scarcely be believed that here, in what we are told is one of the most famous centres of medical education in the world, students are not merely allowed, but compelled, to study medicine and surgery before they learn the rudiments of physiology; and if any student with an intelligent interest in his work wishes to attend lectures or demonstrations in physiology in order that he may understand what he sees at his hospital, he is forbidden to do so, and certificates of attendance on lectures on physiology taken out before the third year will not be received. Unless our Colleges show a little more enlightenment, we think they really will enjoy the world-wide reputation they are so fond of boasting of, but, probably, not of a very flattering kind.

Evidences of the Communicability of Consumption. By G. A. Heron, M.D. London: Longmans, Green, & Co. 1890. Pp. 163.

There can be no doubt that the discovery of the tubercle bacillus is one of the greatest and most important events that has ever occurred in the history of medicine. At the present time there is no one who is able and willing to appreciate evidence who doubts that tubercular diseases are due to the parasite; but it is strange that the greatest consequences which followed from the discovery of the causation of tuberculosis were so slow to be recognised, and that it was not seen from the first moment that the disease, if parasitic, must be both communicable and preventable. Even still this aspect of the subject is too little considered; and while we are in a ferment of excitement about the prevention of hydro-

phobia, we calmly allow a disease which causes from one-fifth to one-seventh of the total mortality of the human race to be spread from person to person without taking even the most rudimentary precautions to check its progress or limit its ravages.

The work of Dr. Heron, which puts the evidence in an exceedingly clear and forcible way, will, we have little doubt, contribute powerfully to remove this apathy, and to awaken attention to the great and needless risks to which we are all continually exposed in our intercourse with phthisical persons.

After an introduction, in which it is pointed out that the general belief now justly entertained in the truth of Koch's discovery makes it incumbent on those who express doubts of it to justify their scepticism by facts, Dr. Heron gives an account of the researches on which the discovery of the tubercle bacillus was based, and the proofs that this organism is the real and sole cause of all tubercular diseases, and shows that the bacteriological evidence is complete—that wherever is tubercle there is the bacillus, and that this leaves the body by various ways, as the expectoration from phthisical lungs, pus from tubercular abscesses, and so on.

Numerous cases are then recorded from the writings of different physicians and surgeons, in which transmission of tuberculosis from the patient to his healthy attendants was clearly shown; and, in an appendix, a much larger number of similar instances are collected by Dr. Frosch, of Berlin, under the direction of Professor Koch himself.

The researches of Dr. Cornet are then described. These have already been fully noticed in this Journal, and our readers will remember how, on the walls, floor, bedding, &c., in rooms occupied by phthisical patients tubercle bacilli were found, while elsewhere they were absent. Further, Dr. Cornet showed that if patients always expectorated into spitting cups, and the expectoration was never allowed to dry, no tubercle bacilli were found in the neighbourhood; but that if the expectoration was allowed to dry on the floor or on handkerchiefs, then the bacilli were carried about by the air, and were found abundantly in the dust of the room.

Dr. Heron has himself made experiments, in which he found that in the little particles of moisture ejected by phthisical patients when they cough, tubercle bacilli are often present.

It has been often urged that if tuberculosis was contagious the nurses who attend consumptive patients should be more frequently affected than is found to be the case.

Bearing on this point, Dr. Cornet obtained, through the Prussian Government, a return of the health and longevity of the members of the different Catholic nursing orders of Prussia. The members of these are bound by their vows to remain for life in their orders, and, consequently, their life history is accurately known. They all pass a medical examination on entrance, and are, consequently, a better class of lives than are the general population. Thirty-eight convents were selected as giving the fullest and most reliable information; these represented a yearly average of 4,028 persons; a total of 87,450 years of human life passed under observation, with 2,099 deaths.

The death-rate was greatly in excess of the average, and this excess is entirely due to tuberculosis. Instead of a mortality from tuberculosis of $\frac{1}{5}$ to $\frac{1}{7}$ of all deaths, nearly $\frac{2}{3}$, or 62·88 per cent., are due to that cause. In nearly half the convents it rises higher than $\frac{2}{3}$, in some to $\frac{3}{4}$, and in two small houses it was the sole cause of death; while in those orders engaged chiefly in surgical nursing tuberculosis caused only 40 to 50 per cent. of the deaths, in those who nursed chiefly medical cases the number rose to 60 to 70 per cent.

These women, who are at the beginning of their career a more healthy class than the average, have an expectancy of life ten years shorter than men engaged in the most unhealthy trades; and a member of the nursing orders who begins convent life at thirty-three years of age has an expectation of life only equal to that of a healthy woman of the general population who is sixty-two years of age. This enormously increased mortality is due to tuberculosis alone; for, if from the total death-rate in the State and in the convents that portion of it due to tuberculosis be deducted, then the marked difference between the two death-rates disappears to a great extent.

Evidence is then given of the danger of the use of milk of tuberculous cows, and of the flesh of animals affected by tuberculosis; and it is shown that the danger is by no means absent even in cases where the tuberculosis is local, and does not apparently affect the udders of the milch cows, or the parts of the carcase eaten.

The supposed immunity of Jews from tubercular diseases is shown to be chiefly due to the strict supervision of their food which their religion enforces. Latterly the immigration of very poor Jews, who have been driven by persecution from other countries, has become very large. These poor people are obliged

to live where they can, and are exposed to many dangers of infection from which they were exempt while they were able to live in exclusively Jewish quarters, such as are to be found in the Continental towns. Owing to this, tuberculosis has become more common among them, showing that their immunity was due, not to their constitutions, but to their freedom from infection.

Considerations on the exaggerated importance of the supposed constitutional and hereditary tendency to tuberculosis follow, and on the effect which the recent modification in our views as to the causation of this class of diseases should have on life assurance practice, and, finally, rules are laid down for the prophylaxis of tuberculosis.

The author concludes as follows:—"I have the strongest belief that what Lister did for surgery, when he rid it of sepsis, Koch's work will yet do for medicine, and rid it of tuberculosis—a disease which kills more men than cholera, yellow fever, and all fevers put together. If an effort in that direction—a strong effort—is not soon made, the medical profession will have to bear the greater part of the reproach that the existence of tubercular disease is to mankind."

The Intracranial Circulation, and its relation to the Physiology of the Brain. By JAMES CAPPIE, M.D. Edinburgh: James Thin. 1890. Pp. 188.

THIS suggestive and pleasantly written essay is of a purely speculative nature. The author is, he tells us, not a physiologist, but a general practitioner, and his speculations are the outcome of the study arm-chair, and not of work in the physiological laboratory. As was to be expected under such circumstances, his views differ in many respects from those usually held by men whose physiological beliefs are based on what they see, rather than on what they think ought to be.

As regards the capillary circulation, Dr. Cappie thinks that it is much less governed by the cardiac impulse and the vaso-motor nerves than is usually supposed, and that it is mainly regulated by the attractions between the blood and the tissues, which at one time were supposed to play such an important part in the circulation. His arguments in favour of this opinion are drawn partly from the circulation of the juices in plants, where there is neither heart nor nerves, and partly from the phenomena of the portal

circulation. But the vegetable circulation taking place from cell to cell is a very different thing from the animal circulation in open vessels; and in the case of the liver we fail to grasp the argument, since the difference between the blood pressure in the vena portæ and that in the inferior cava is amply sufficient to carry the blood through the hepatic capillaries.

Passing to the cranial circulation, it is maintained that the quantity of blood in the interior of the skull must be constant, and more than doubt is thrown on the compensation between the blood and cerebro-spinal fluid. In states of mental activity the circulation is mainly arterial and capillary; but during coma and sleep, which are looked on merely as different degrees of the same condition, the blood is for the most part contained in the veins of the pia mater, which exert a compression on the surface of the brain, to which the sleepy condition is mainly attributed.

The author attempts, in the last chapter, to explain, in accordance with his theories, the phenomena of hypnotism and some other points in mental physiology; and, in an appendix, deals critically with the views of those writers who have advanced doctrines different from those held by him.

Although we cannot agree with much of what Dr. Cappie puts forward, yet we can recommend his book to our readers as being earnest, ingenious, lively, and full of suggestive ideas. It is very pleasant reading, and will well repay the time spent in its perusal.

Igiene dell' Orecchio. Per il Prof. Vincenzo Cozzolino; Direttore della clinica pareggiata dell' orecchio, naso, e gola nell' Ospedale Clinico dell'Università di Napoli; Vice-Presidente del Congresso Internazionale Speciale di Parigi, 1889, &c., &c. Quinta Edizione. Napoli: Filinto Cosmi. 1891. 12mo. Pp. 83.

Professor Cozzolino is the author of many valuable tracts on diseases of the ear, throat, nose, larynx, &c. This little work, which has reached a fifth edition, is devoted to the management of the ear and hearing in the newly-born infant, the child, and the adult, concluding with a chapter of general instructions. It is eminently practical, and that it has been appreciated in its native country is shown by the fact that four editions were exhausted in three years. In other countries also it has been favourably received, having been translated into French, German,

Swedish, and Spanish. It is well worthy of being translated into English also. The little book is dedicated to Prof. Politzer, of Vienna, "Otologo sommo e Maestro carissimo," who accepts the dedication with great pleasure.

The Convolutions of the Brain: a Study in Comparative Anatomy. By SIR WILLIAM TURNER, Knt. London: Williams & Norgate. 1890. Pp. 52.

THIS remarkable address was delivered to the Anatomical Section of the Tenth International Medical Congress in Berlin last August, and was a notable feature in the proceedings of what was the most remarkable meeting of medical men which the world has ever seen. It is characterised by the learning, clearness, and thorough mastery of the subject which characterise all the writings of its eminent author. The text is profusely illustrated with drawings, which, with three exceptions, are all from original material.

Dividing the cerebral hemisphere into rhinencephalon and pallium, Sir W. Turner modifies Broca's classification of mammals into osmatics and anosmatics, and arranges "the mammalia in relation to the development of the olfactory apparatus into three groups:—

"(*a*). Macrosmatic, where the organs of smell are largely developed—a condition which is found, for example, in the ungulata, the proper carnivora, and, indeed, in the majority of mammals.

"(*b*). Microsmatic, where the olfactory apparatus is relatively feeble, as in the pinnipedia, the whalebone whales, apes, and man.

"(*c*). Anosmatic, where the organs of smell are apparently entirely absent, as in the dolphins, and it may be in the toothed whales generally, though, as regards some genera of odontoceti, we still require further information."

The rhinencephalon is then studied. Its separation from the pallium is shown to be fundamental, and to be distinct even in petromyzoa. It consists of the olfactory bulb, crus or peduncle, and lobus hippocampi. This lobus hippocampi, although relatively smaller in anosmatics than in osmatics, is present in the former, and hence has probably some function besides that connected with the sense of smell. While the Sylvian fissure belongs to the pallium, the Sylvian fossa or vallecula, which occurs much lower in the animal series, is part of the rhinencephalon.

The convolutions of the pallium divide themselves into three

leading groups—sagittal or longitudinal, vertical, tranverse or coronal, and arcuate.

"The orders in which the pallium assumes the most complex arrangement of convolutions are the proboscidea, ungulata, cetacea, carnivora, pinnipedia, and primates with homo; but even in some of these orders there are a few species in which the pallium is either smooth or only feebly convoluted; this is especially the case in the smaller species of these orders, where the weight of the body is small, but where the brain is relatively larger to the body than is the case in the larger species of the same order. A central sensori-motor apparatus of sufficient magnitude for the requirements of the animal can thus be accommodated in a cortex possessing a plane surface, and the need for a convoluted folding of that surface does not arise. The most striking examples of smooth-brained mammals, in an order otherwise gyrencephalous, is seen in the little marmoset monkey—a genus of primates."

"The study, therefore, of the convoluted surface of the pallium in the mammalia does not sanction the view that there has been a continuity of evolution from ornithorrhynchus to homo in a direct longitudinal series, as well-convoluted brains may exist in an order, the general construction of the animals forming which may be inferior in other respects; whilst some species in another order presumably higher in its organisation may have the brain only feebly convoluted, or, perhaps, even with a smooth surface."

As regards the forces which produce the convolutions, most weight is placed on the unequal growth of the brain and of the cavity in which it is contained. The presence of the vessels of the pia mater are considered to have only a slight influence.

In conclusion, we would again express our admiration of this masterly address, which, although full of detail, is nevertheless replete with interest, even for those who are not professional anatomists.

The Fourth Annual Medical Report of the Hao-Meng-Fông Hospital. By C. C. DeBurgh Daly, M.B. Ningpo. 1890. Pp. 20.

There are some points of interest in this pamphlet, for instance the following concerning those who enter to be cured of opium-smoking:—"It is the custom in this hospital to cut off all opium from the moment the patient enters, and there has been no bad result from this, except that several, unable to bear the great suffering each and everyone must undergo during the first few

days, have escaped over the walls; one jumped from a window about 18 feet from the ground, using his umbrella as a parachute to break his fall. After a residence of a month the patients leave strong and active men."

The native dentists claim to have a powder which is rubbed on the gum near a diseased tooth; in a few minutes the patient is told to sneeze, when out drops the offending tooth. They will not, however, even for a reward, allow its action to be put to the test of a European's inspection.

A Text-book of Chemical Physiology and Pathology. By W. D. HALLIBURTON, M.D., B.Sc. London: Longmans, Green & Co. 1891. Pp. 874.

THE study of physiological chemistry has within recent years received a great impulse and has undergone a rapid development. It daily becomes increasingly apparent that the chemical aspects of pathology are of great significance, and the key to the solution of many important problems is to be sought not so much in the morphology of micro-organisms as in the chemical products which they elaborate.

We have already some excellent text-books in English—viz., those by Charles, by Gamgee (Vol. I.), and a translation of Bunge's charming lectures on physiological chemistry was a welcome addition to our literature.

In the present portly volume, Dr. Halliburton sets himself the difficult task of presenting a complete text-book of chemical physiology and pathology.

Part I. treats of methods of research and analysis; Part II., of the chemical constituents of the organism; and Part III., of the tissues and organs of the body; Part IV., of alimentation; Part V., of excretion; and Part VI., of general metabolism. The text is enriched with 104 illustrations. The general impression the book has made upon us is that it contains a vast amount of valuable information, and that it will be found extremely useful as a means of reference to most of the recent works in this department.

In some cases the author, we think, attempts too much. Thus, in the chapter on the cell, after a brief sketch of the cell theory, he enters into a minute discussion of the histology of protoplasm, of the nucleus, and of its modes of sub-division. No fewer than six figures are allotted to the series of changes known as karyo-

kinesis. Similarly as regards the histology of muscle, epithelium, and connective tissue. Surely all this, however excellent, is out of place in a chemical text-book.

As might be expected from the direction of Dr. Halliburton's own investigations, the chapters on proteids and albuminoids are full and satisfactory, and useful tables are given for the identification of albumens, globulins, albumoses, and peptones.

Pigments are classified as follows :—

1. Respiratory or proteid pigments—*e.g.*, hæmoglobin, hæmocyanin, histohæmatins, chlorophyll.
2. Derivatives of hæmoglobin.
3. Lipochromes, the fatty pigments—*e.g.*, lutein, visual purple, &c.
4. Melanins.
5. Indigo pigments.
6. Humous substances.
7. Miscellaneous—*e.g.*, turacin, cochineal, &c.

Chapter XIII. contains an interesting account of ptomaïns and leucomaïns.

A few misprints and slips occur—*e.g.*, the statement that the most abundant urate obtained from human urine is the *normal* sodium urate. But the work is, as a rule, free from errors, and represents a great storehouse of information, which cannot but prove acceptable to all workers in the field of physiological chemistry.

Transactions of the American Dermatological Association. Fourteenth Annual Meeting on the 2nd, 3rd, and 4th of September, 1890. New York. 1890. Pp. 52.

In reviewing the proceedings of this Association in the year 1889 we had occasion to call attention to the comparative valuelessness of these "Transactions," from the absence of the original papers on which the reported discussions were based. No change for the better is found in the present issue. Papers that would be eagerly read are those of Dr. Taylor—"Observations on Prurigo, Clinical and Pathological," and "Cases of Syphilitic Re-infection;" of Dr. Duhring—"Remarks on the Treatment of Dermatitis Herpetiformis;" and of Dr. Jackson—"Electrolysis in the Treatment of Lupus Vulgaris." No indication of the value of these papers can be gleaned from the meagre abstracts given. We note that Duhring has found most success in the treatment of the

affection which bears his name from the prolonged use of sulphur ointment applied by long and thorough rubbing. It is to be hoped future issues will assume a form more worthy of an Association which contains so many distinguished dermatologists, and more deserving of a permanent place in the library.

The Year Book of Treatment for 1891. *A Critical Review for Practitioners of Medicine and Surgery.* Cassell & Company, Limited, London, Paris, and Melbourne.

The present issue, the seventh, of Messrs. Cassell's Year Book has been increased by more than one hundred and fifty pages, but the original plan of the book is not altered. It still remains a concise epitome of the chief articles of the past year—articles selected and epitomised by a staff of contributors which includes many of the best known and ablest specialists in the Three Kingdoms; and these gentlemen have wisely kept in mind that the Year Book is for practitioners, and they have given what actual practice requires—useful, workable information; even the article on "General Therapeutics" is, in the present number, intelligible to the ordinary reader.

Where all the sections are marked by excellence and careful editing it may seem invidious to draw special attention to a few of the many, but the usefulness and excellence of the articles on "Diseases of the Heart" and "Diseases of the Nervous System" are so marked that it would be unfair to practising physicians not to draw attention to them. They alone are well worth more than the price of the book. Heart diseases are considered under the following headings:—

1. Acute cardiac disease.
2. The establishment and maintenance of compensation.
3. Failure of compensation, and the selection of cardiac tonics.
4. Chronic cardiac disease, and its treatment by means of exercise.
5. Diet in heart disease.
6. The symptomatic treatment of chronic cardiac disease.
7. Summary of treatment of cardiac failure.
8. Cardiac strain and its treatment
9. Idiopathic enlargement and functional disease.
10. Graves's disease.

We have no hesitancy in recommending the present volume, which we consider to be superior to any of its predecessors; more practical, more generally useful to practitioners. The sectional editors have not allowed themselves to be carried away by specious theories, but have confined their attention to fulfilling the object of the book's existence—the providing of an epitome of the most practical and useful of the medical articles of the past year for the use of men whose practice does not allow time for the study of a large number of home and foreign medical journals.

Some Considerations in regard to Acute Obstructive Diseases of the Lungs. By A. H. Smith, M.A., M.D. New York. 1890. Pp. 16.

This is a reprint of a paper read before the International Medical Congress, 1890. The views of the author are very just, and may be summarised thus :—

In acute pulmonary obstruction, the danger being from exhaustion of the right heart, the pulmonary valve-sound gives more reliable indications as to the gravity of the case than the pulse at the wrist does.

The stages to be noted are—(1) Marked accentuation denoting a fairly vigorous right heart labouring to overcome resistance in the pulmonary circulation; (2) Decrease of accentuation with only moderate dyspnœa indicating decrease of pulmonary obstruction; or, Decrease of accentuation with increase of respiratory distress indicating exhaustion of right heart.

Relief is to be sought by regulating the diet, by the use of medicines to dilate the arteries and promote transference of blood to them from the veins, by inhalation of oxygen, by artificial respiration, and by placing ligatures about the extremities.

The Dignity of Woman's Health, and the Nemesis of its Neglect. By Robert Reid Rentoul, Doctor of Medicine; Member of the Royal College of Surgeons, England; Fellow of the Obstetrical Society of London. London: J. & A. Churchill, 11 New Burlington-street. 1890.

We disapprove all books of this class. The family medical adviser can, and does, convey all the necessary information for the regulation of the female health. That the dictates of fashion

have more influence on women than the teachings of physiology is deeply to be regretted, but books such as Dr. Rentoul's do not touch the evil.

The proper remedy is a good general knowledge acquired in youth; and until elementary physiology becomes a part of the general education of both sexes fashion will reign supreme. The family doctor, by the encouragement of gymnastic amusements, may do much to counteract the evil fashion of wasp-waists; and the modern tendency to late hours might be counteracted by open air mid-day amusements. But we have never known good to result from such books as the one under consideration. With the author's advice there is no cause for complaint—it is sound and judicious; but in producing the book Dr. Rentoul occupies a position more frequently occupied by the writers of covert advertisements than by physicians of the standing which he possesses in the profession.

Lehrbuch der Auscultation und Percussion mit besonderer Berücksichtigung der Besichtigung, Betastung, und Messung der Brust und des Unterleibs zu diagnostischen Zwecken (Text Book of Auscultation and Percussion). Von Dr. C. GERHARDT, Professor der Medicin und Geh. Med. Rath, in Berlin. 5te Auflage. Tübingen: H. Laup. 1890. Pp. 363.

IT is with much pleasure that we welcome the fifth edition of this standard work. Now-a-days, when so much attention is being paid to microscopical, chemical, and other scientific methods of diagnosis, and when so many books relating to these subjects are being published, there may occasionally be some danger of the more old-fashioned methods of diagnosis—percussion and auscultation—slipping somewhat into the background. Under these circumstances the publication of a new edition of the work of such a recognised master as Professor Gerhardt is most opportune.

For the work itself we have nothing but praise. It goes most thoroughly into the subject with which it deals. Inspection, palpation, and percussion, both of thorax and abdomen, are discussed at considerable length. An idea of the completeness of the book may be derived from the fact that the description of the varieties of shape of the thorax occupies 14 pages. Much attention is devoted to the discussion and elucidation of the physical

laws which relate to the production of sounds within the thorax—a portion of the book which, considering the obscurity of this subject, is highly valuable.

Auscultation is very fully described, and occupies almost 70 pages.

In the last 120 pages the groups of physical signs are described which are present in various morbid conditions, *e.g.*—the signs of air and fluid in the pleural cavity, dilatation of the stomach, air in the pericardial sac, renal tumours, &c. These articles are admirably written, and will well repay perusal. Few will read them without gaining new and valuable ideas.

The work is illustrated with 49 woodcuts. It is altogether a most valuable work, one of the most reliable, modern, and complete that we are acquainted with on a most important subject. We have heard with great pleasure that it is intended to publish an English translation of it. We believe that it will meet with wide circulation and acceptance in English-speaking countries, and that it will become here, as it is already in Germany, a standard work on physical diagnosis.

The Proclivity of Women to Cancerous Diseases and to certain Benign Tumours; with Appendix on Heredity as a Cause of Cancer. By Herbert Snow, M.D. (Lond.), &c. London: J. & A. Churchill. 1891. 8vo. Pp. 58.

Dr. Snow pushes, in this booklet, to its logical conclusion the view he put forward in the paper, "Is Cancer Hereditary?" read at the Cardiff Meeting of the British Medical Association in 1885, and reprinted here as an appendix. He is an uncompromising opponent of the theory of hereditary transmission, and a firm believer in the local origin of cancers, to which is superadded a trophoneurotic factor of causation. The tables and evidence adduced by Dr. Snow are interesting in the extreme, and will, we hope, go far to demolish the time-honoured fetish of a cancerous dyscrasia. Every surgeon will endorse Dr. Snow's plea for early operation as the only chance of saving life—a chance too often lost through the dilatoriness of the practitioner imbued with the theory of primary constitutional infection. This protest is the more necessary now, as it would seem as if the period for successful surgical interference was about to be still further postponed until the solemn and mythic wonders of electricity—green, blue, and white—had

been tried to the utmost, and found wanting. We cannot do better than quote Dr. Snow's views as to operation, based on his theory of origin, adding an emphasis, if we can, to the necessity for "thoroughness" in the work. "Such a conception," he writes, "will necessarily lead to as early as possible a resort to surgical measures; to an operation which will aim at the most complete eradication of the disease, whenever possible; to incisions wide of the visible tumour; to the extirpation of an extensive margin of tissue, healthy to the naked eye, but in which we surely know that invisible cancerous germs are present; and, most important perhaps of all, to *the most careful search for, and extraction of, all the adjacent lymphatic glands lying in the track by which the disease ordinarily spreads.*"

We commend this, and its implied necessity for early diagnosis, to all rational physicians and surgeons, confident that, in the light of our present pathology, hope lies in an early resort to the knife, unpleasant as it may seem, and not in a pilgrimage to Rochetta, with its *acqua della pelle* and mediæval incantations.

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1. *Royal University of Ireland. The Calendar for the Year* 1891. Dublin: Alex. Thom & Co. 1891. 8vo. Pp. 383.

2. *Royal University of Ireland. Examination Papers*, 1890. A Supplement to the University Calendar for the year 1891. Dublin: Alex. Thom & Co. 1891. 8vo. Pp. 548.

We have been favoured with a copy of each of these useful publications, which cannot fail to be of interest to members of the medical profession. The volumes call for little remark. They are brought out in Messrs. Thom's usual excellent style, and their pages are singularly free from errors or misprints.

As regards the Faculty of Medicine, very few alterations in the Regulations have to be noted. At page 178 of the Calendar, certain changes in the special subjects for examination in 1892, in Botany and Zoology, at the First Examination in Medicine, are set forth. In two separate places (pages 117 and 150) attention is directed to the fact that certificates of attendance at Night Lectures will no longer be received.

PART III.

MEDICAL MISCELLANY

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Samuel Gordon, M.D., F.R.C.P.I.
General Secretary—W. Thomson, M.D.

SECTION OF MEDICINE.

President—J. M. Finny, M.D.; President of the Royal College of Physicians of Ireland.
Sectional Secretary—A. N. Montgomery, M.R.C.P.I.

Friday, March 6, 1891.

The President in the Chair.

Specimens Shown.

Dr. Walter G. Smith exhibited, as a card specimen, elephantiasis of the penis and scrotum.

Dr. J. O'Carroll showed a boy who was affected with molluscum contagiosum, and also exhibited a microscopic slide of a section of one of the tumours.

The President asked for information whether the patient could in any way trace the disease to contagion from others in his family, and also for the length of time the eruption had existed?

Dr. J. F. M'Veagh said that in the Children's Hospital, Upper Temple-street, he had seen several cases of mollusca—nearly always located on the lower eyelid or malar bone. He has now under his care a lady with a well-developed form of mollusca, also located on the lower eyelid. Treatment: fomenting the cyst. He had not made up his mind as to the disease being contagious.

Dr. O'Carroll, in reply, said the boy who presents the eruption of molluscum contagiosum on the pubes, penis, and scrotum, gives no history which would justify the theory implied in the name. He sleeps in a bed with two other boys, both of whom he examined carefully, and

could find no trace of molluscum. He states that he has had a venereal urethritis, but gives no history or sign of syphilis. The disease has existed for three months, and has undergone no change since he noticed it.

The Diagnostic Significance of Venous Hum in the Neck: a Study in Statistics.

Dr. Bewley read a paper on the diagnostic value of a venous hum in the neck. [It will be found at page 406.]

Dr. Wallace Beatty remarked that he had, in some cases, heard cervical venous murmurs in patients who certainly did not appear anæmic. Still he has thought that the presence of this murmur may be a help in treatment. In one patient under his care, who suffered from persistent headache for months, and who had not an anæmic appearance or symptoms, the discovery of an anæmic murmur led to treatment by administration of iron, which brought about a rapid cure—a great number of other remedies having been previously tried in vain.

Dr. Walter Smith expressed his general concurrence with the views put forward by Dr. Bewley. Admitting as a fact that over 50 per cent. of non-anæmic subjects present venous hum in the neck, still we have to deal with the occurrence of venous hum in over four-fifths of undoubtedly anæmic cases. Hence we should look for an explanation of this coincidence in the mode of causation of these murmurs, and the present theories as to the production of these phenomena can scarcely be regarded as satisfactory.

Mr. Patteson remarked that if he might be permitted to make a few observations on a subject more purely within the domain of the physician, his experience corroborated that of Dr. Bewley. From the observation of a large number of patients in a general out-patient department, he had long ceased to attach any importance to the presence or absence of a venous hum from a diagnostic standpoint in cases of anæmia. It would be interesting to have a series of similar careful statistics from Dr. Bewley as to the diagnostic value in anæmia of basal cardiac murmurs of functional origin.

The President concurred in the view expressed as to the real basis for coming to a conclusion being the physical conditions which produce such murmur, and until these are settled its variation must be a matter of theory. He called attention to the existence of venous murmurs under the first bone of the sternum, which, by position, was removed from the fallacies of extraneous influences. They were very much more rare in this situation than in the neck, and were, as far as he could depend upon his memory, invariably associated with some of the graver and more pronounced forms of anæmia.

Dr. Bewley, in reply, stated that he had purposely not entered on the

discussion of the causation of venous murmurs, because he did not think these murmurs could be satisfactorily explained. He was gratified to find Drs. Smith and Patteson agreed with his main conclusions. In reply to the President, he said he had not investigated the presence or absence of murmur in the innominate veins.

A Case of Myelogenous Leucocythæmia.

Dr. Wallace Beatty reported a case of myelogenous leucocythæmia, which had been under his care in the Adelaide Hospital in September, 1890. The patient, an unmarried woman, dressmaker by occupation, had been in ill-health for about three months. Seventeen days before she came into hospital she was attacked with erythema nodosum in her legs. On admission to hospital she was very anæmic; cardiac and cervical venous anæmic murmurs were present. The sternum was exquisitely tender. Dr. Bewley examined her blood; he found the white corpuscles greatly increased in number—the proportion of white to red being 1 to 5. The red corpuscles were diminished in number, being one million to the cubic millimetre. There was no enlargement of the lymphatic glands, and the spleen could not be felt. Dr. Bewley made the *post-mortem* examination.

The spleen weighed 10 ounces. Under the microscope it was normal, except that there was evidence of increased hæmolysis in sections stained with ferrocyanide of potassium and hydrochloric acid. There was no enlargement of the lymphatic glands. The marrow of the femur was red and fairly firm, not fatty. Under the microscope were found numbers of mono-nucleated white corpuscles, large and small red corpuscles—some normal, some irregular in shape, a few nucleated, spindle-shaped, connective tissue cells, and a few oil drops.

The liver was enlarged. On microscopic examination the liver cells were found atrophied in places, and there was a large number of leucocytes between the liver cells. There was no evidence of iron in the liver.

Dr. Graves asked what kind were the white cells found in the blood, also whether the red cells were altered in appearance. Dr. von Jaksch states that it is probable that no case of pure myelogenous leukæmia has yet been recorded, and he mentions that one case which he saw, in which there were changes found in the medulla of the long bones similar to those mentioned by Newman, there was disease of the kidneys. In Dr. Beatty's case there was disease of the kidneys also.

Dr. Wallace Beatty, in reply, said, except that there was a great increase in the white corpuscles, and a diminution in the red, there was nothing unusual observed by examination of the blood. The cloudy swelling of the renal epithelium he considers accounted for by the fever which was present.

Malignant Endocarditis.

Dr. O'Carroll said the object of the paper was to show—first, that malignant endocarditis is a name for a variable group of clinical phenomena, and not, so far as we know at present, for a constant pathological condition. Secondly, that "malignant" does not signify that there is a necessarily fatal form of endocarditis which differs in kind from all non-fatal forms. Thirdly, that probably many cases of endocarditis in which the acute disease comes to a favourable ending, and which are never thought of as having any causation in common with malignant endocarditis, are really due to septic infection, and would have set up a secondary septic infection from the heart, if the proliferative process had gone so far as to end in necrosis. In support of the view that recovery from so-called malignant endocarditis is possible, a heart was shown which bore all the marks of having been affected by a malignant endocarditis, but had been obtained from an apparently healthy young man who died suddenly. Death had been caused by blocking of the right descending coronary artery by a large oval mass with calcareous core, which had been dislodged from a collection of such oval masses in the chordæ tendineæ of the anterior mitral valve.

Dr. Walter Smith expressed his belief that so-called "malignant endocarditis" is but a localised expression of general pyæmia. There is no single specific cause for malignant endocarditis, hence malignant endocarditis should be removed from the category of cardiac diseases, and be described in connection with pyæmia. And its special diagnosis, in many cases impossible, is rather a feat of clinical interest than one of great practical significance.

Dr. O'Carroll, in reply, suggested two clinical types of malignant endocarditis—one, that in which the endocardial lesion is but one of many suppurative foci; the other, in which the lesion, so far as one can find, stands alone. In this latter case one may suggest a hypothesis that the pyæmic poison, if small in amount, might be coped with and beaten by the tissues, but that some of the organisms get a lease of a breeding-ground and source of subsequent dissemination in the place of least resistance—namely, a previously sclerosed valve.

Friday, April 17, 1891.

Hypnotism.

Dr. Cruise read a paper on hypnotism. [It will be found at page 377.]

Should we give Hypnotism a Trial?

Dr. G. C. Kingsbury read a paper on the above subject. [It will be found at page 396.]

Dr. Foot wished to hear a differential diagnosis between mesmerism and hypnotism, because many great men had made shipwreck of their reputations on the rock of mesmerism. He thought that "inorganic functional disease" was the feeding-ground for every form of quackery. A liberal construction of the oath of Hippocrates seemed to him to provide against the exertion of a strong over a weak will. He was anxious to hear how long the cures of dipsomania had lasted.

Dr. Joseph Redmond mentioned the case of a girl, aged nineteen, who was admitted into the Mater Misericordiæ Hospital suffering from severe pain in the side for five years. The pain had become much aggravated during the last two years. All methods of treatment had been previously tried in other institutions without benefit. Hypodermic injections, Corrigan's button, counter-irritation in various forms, were now tried, but all these measures failed to give relief. Dr. Cruise hypnotised the patient on five or six occasions, and completely cured her of the pain which had caused her so much trouble, and lasted for such a length of time.

Dr. M'Cullagh mentioned two cases in which he operated:—April, 1886.—T. M——., B.L., aged twenty-eight. Operation, circumcision; duration, ten minutes; time occupied by operation, 7 minutes; mode, rapid counting; number counted up to anæsthesia, 27; no pain. Sept., 1886.—T. C., medical student, aged twenty-two. Operation, circumcision; duration, twelve minutes; time, twelve minutes; mode, rapid counting; number between 80 and 100; painless until insertion of sutures.

Dr. J. J. Murphy did not wish to enter into any discussion as to the merits or demerits of hypnotism or the two schools of training in Paris; he would confine himself to the purely clinical side. His first case was one of dipsomania—a lady; every form of treatment having failed. She remained three months under treatment. She lapsed once in the end of the second month from mental worry. However, she at once came and told him. Since then, five months afterwards, she went through a very severe ordeal unscathed. She feels well and happy. She suffered from insomnia and headache, which were cured by suggestion. Second case—masturbation in a female, who was reduced to a miserable state of existence, with tendency to suicide. She is now under treatment for six weeks, and is considerably improved—in fact, feels quite hopeful of ultimate cure. Third case—dipsomania; failure due to the difficulty of getting the patient sober; as he expressed it, he took four or five glasses just to settle his nerves. He saw four cases in Dr. Tuckey's (of London) study:—(1) Alcoholism, male, after one year; cure so far. (2) Melancholia, female, now two years well. (3) Infantile paralysis. Persistent headache, three years' duration; cured. (4) Locomotor ataxy, male. Lightning pains much relieved. Dr. Tuckey's mode of hypnotism is

standing beside the patient, gently stroking the forehead, and then closing the eyelids suggesting sleep. In all cases the induction of sleep was very rapid. He tried this plan on one of his cases to-day, and the patient passed into the hypnotic state in one minute.

Mr. Edward Hamilton thought there was no need to quote a number of our cases of hypnotism, because it has been proved beyond doubt that hypnosis can be produced; but he would wish that this subject should be discussed calmly and with dignity, as it involves many important issues. He had been struck with awe at the absolute fact that the immaterial principle can pass from one to another—that the mind of the operator can penetrate the corporeal body of the subject. It is an interesting inquiry how far such power is influenced by distance. Is it governed by the law of other forces as to the diminution of force by distance? When a young practitioner, he remembered a case of fever in which all narcotics failed. He sat by the patient's bedside, and, fixing his eyes on him, wished intensely, almost prayed, that he might sleep. After a few minutes his eyes drooped, and he slept for some hours, which caused him the greatest benefit.

Mr. Conolly Norman said the evils of hypnotism have undoubtedly been absurdly exaggerated, nevertheless there are dangers. The classical case of Heidenhain's brother cited, also a case of the speaker's, in which he believed general paralysis had originated in the constant practice of hypnotism. The extreme moderation of Dr. Crnise and Dr. Kingsbury would do as much service to hypnotism as the most extravagant claims of Voisin had done harm. Percentages of cases of insanity treated were very deceptive, unless we were informed what forms of insanity, and how many, were referred to. From a large asylum one might easily select a large number of cases which can be hypnotised. Many cases of insanity cannot be hypnotised, and some would be injured if they were. It is waste of time to try hypnotism in cases of acute mania or severe cases of melancholia. There can be no doubt of the service which hypnotism can render, at least for a time, in dipsomania; but in true insanity good may occasionally be done, and many patients are quite susceptible. Such are mild cases of melancholia, cases of certain conditions approaching paranoia, such as *Folie du doute Grübelsucht*, and the like. In ordinary cases of paranoia with fixed delusion it is usually impossible to hypnotise owing to the patient's suspicion. It is at any rate a good thing to find a method of treatment being considered which appeals alone to the mind at a time when we have been recently told that the true scientific attitude is to look to every other organ in the body than the brain for the cause and the cure of insanity.

Dr. FitzGerald made mention of two cases in which he obtained great benefit from hypnotism. In the first case, the patient had suffered from deafness and tinnitus, the latter of a very distressing character.

The deafness was due to chronic catarrh of the middle ear of some years' standing, and though no improvement was gained as regards the hearing, the tinnitus became greatly lessened, and at times disappeared. In the second case, that of a young man, of a highly nervous temperament, who also suffered from tinnitus, great benefit followed from the treatment.

Mr. Tobin asked Dr. FitzGerald whether, in the case in which improvement was effected in a patient with organic disease of ear, any change was observed in the condition of the parts.

Dr. FitzGerald replied—Certainly not.

Dr. Richard Hayes related two typical cases in which hypnotic suggestion had succeeded in relieving symptoms. The first case was that of a young woman who suffered from fixed pain in the hip of a year's duration, who, after four hypnotisations, was completely relieved. The second case was one of insomnia occurring in a woman recovering from sciatica, who had had only two hours' consecutive sleep for eleven weeks. She slept for eight hours after the first hypnotic sleep, and had slept soundly each succeeding night up to date of report.

Mr. Wheeler asked what difference was there between hypnotism and electro-biology.

Mr. Cox and Dr. O'Carroll also spoke.

Reply to Criticism.

Dr. Cruise having asked Dr. Kingsbury to reply,

Dr. Kingsbury thanked the whole audience for the patient and sympathetic hearing, and especially the speakers, for the kindly way in which they had criticised the papers of Dr. Cruise and himself.

In answer to Dr. Foot, Dr. Kingsbury explained that practically there was no difference between mesmerism and hypnotism. Dr. Foot spoke of the wrecked men who had dabbled in mesmerism. But what wrecked those men?—partly, perhaps, their own over-zeal, but mainly the cynical sneering and malignant persecution of a prejudiced public. To-day there is a more generous and scientific spirit abroad, and it is to be hoped that no one will go back to the mere sneering of fifty years ago, which certainly will not pass now for argument. Dr. Foot thinks that the phrase "non-organic functional disorders" exactly describes the limits wherein hypnotism will be of service, and remarks with Ecourt that this has always been the "pasture ground of every form of quackery." He gladly joined issue with him here, for he did not find that those who are familiar with hypnotism limit its employment to this particular field—and certainly Dr. Cruise did not—but find it useful alone, or in conjunction with ordinary remedies—in surgery, in midwifery, and in the treatment of many ailments outside the pale indicated by Dr. Foot, such as rheumatism, neuralgia, pneumonia, tinnitus. But if for argument's sake it be granted that hypnotism is applicable only to non-organic functional

isorders, and further granted that, as Dr. Foot implies, hypnotism is another form of quackery, is the reproach that of hypnotism or that of our present therapeutics, which is unable to cope with these very disorders? In branding hypnotism as charlatanism, Dr. Foot is branding as quacks men who are eminent in medicine, physiology, and psychology, and whose scientific instincts led them, before either adopting or condemning hypnotism, to familiarise themselves with its phenomena. Dr. Foot further scoffs at the idea of inebriety being cured by hypnotic suggestion, and thinks that these cures are only the temporary repentances of drunkards recovering from a debauch, such as we all frequently witness. He was astounded that a man of Dr. Foot's wide reading should be so little acquainted with the literature of this particular subject; if he will read what has been written, he will find well-authenticated cases of inebriates keeping sober for ten or twenty years, which periods certainly exceed the length of alcoholic remorse. Mr. Hamilton's remarks are particularly welcome, for if men of his eminence and ability will seriously investigate hypnotism, we shall soon be able to say whether it is of value or not. Mr. Hamilton wants to know how he reconciled the statement that suggestions towards sobriety will take lasting effect with the opinion that once the subject crosses the operator's threshold, the latter's influence is at an end. What he meant was this—that no fresh suggestion made by the operator would take effect on the absent patient. The case of insomnia mentioned by Mr. Hamilton seems clearly one in which he hypnotised his patient by means of fascination. Mr. Conolly Norman thinks that he had minimised the risks of hypnotism, and mentions the case of a general paralytic, where he thinks the insanity was due to hypnotism employed *nightly, for years*, for insomnia. In the first place, such prolonged use of hypnotism is very rare; and secondly, might not the insanity have been due to the condition which provoked the insomnia? Mr. Norman considers it hopeless to try hypnotism in acute mania. Dr. Voisin seems to have been very successful with such cases. Mr. Norman thinks Dr. Voisin deserved in a measure the reception he got at Leeds, on account of his wild extravagance. Perhaps Dr. Voisin did pourtray the rosy side of hypnotism, but one of the statements made by him, which was at the time considered most incredible, was that the menstrual functions, or the action of the bowels, could in any way be controlled by means of suggestion. Both these statements have been amply corroborated since. Dr. C. E. FitzGerald's cases of tinnitus seem veritable triumphs, and nobody will accuse him of extravagance or fanaticism. Mr. Wheeler wishes to know what relation hypnotism has to electro-biology. It is one and the same thing.

The Section then adjourned.

CLINICAL RECORDS.

Recurrent Pneumonia in a Child: marked benefit from Venesection. By J. W. Moore, B.A., M.D., Univ. Dubl., F.R.C.P.I.; Physician to the Meath Hospital and County Dublin Infirmary.

On Monday, January 19, 1891, Georgie W., a school-girl, in her eleventh year, fell ill with an attack of acute pneumonia. I did not see her until Thursday, the 22nd (4th day), when I found her very feverish, with a thickly-coated tongue and much dyspnœa. Pulse 132; resp. about 64; temp. 103·2°. There were decided physical signs of a left basic pleuro-pneumonia.

Acting under my advice, the child was removed from the large draughty dormitory in which she lay to a cosy, warm, well-ventilated room, in which the steam-kettle was kept playing, as the weather was cold. She was ordered 3-grain doses of quinine every four hours, and a single dose of calomel—two grains. Next day she was much better—P. 120; R. 50; T. 99·6°. Saturday, January 24 (6th day)—P. 110; R. 36; T. 97·9°. Tongue still furred. Monday, 26.—P. 86; R. 32; T. 97·6°. In a few days convalescence appeared complete, and the child went to visit a relative, returning to the school about the middle of February, apparently quite restored to health.

On February 20, however, the child was taken suddenly ill again with the ordinary symptoms of an acute fever and violent stabbing pain in the left side. It seems that the school authorities had placed her in the same large dormitory on her return—a fact which certainly predisposed to her relapse, as this second attack may be regarded.

On the second day of her illness (Feb. 21) I found her with an extremely rapid pulse (148 to 152), very hurried distressful breathing, and an axillary temperature of 103°. She had already brought up, with coughing, a mass of characteristic rusty pneumonic sputum. The percussion note over the left base was slightly hyper-resonant; fine crepitation and a lymphy pleural friction rub were audible in this situation.

I had her again removed to the room in which she had progressed so favourably in the former attack. She was poulticed, and a steam-kettle, with turpentine vapour, was kept going in her sick room. Quinine and a dose of calomel were given as before. Nourishment: Beef-tea, chicken-jelly, and milk. Water *ad libitum*. She was placed in charge of one of the Red Cross Sisters—"Sister Barbara"—to whom I am indebted for the accompanying temperature chart.

On Feb. 22 (3rd day) Georgie W. took her nourishment well, but was flushed and very restless.

On Feb. 23 (4th day), the morning temperature, even after tepid sponging, was 103·2°. She was ordered 3 grains of calomel, to be taken at once, and a powder containing one grain each of mercury with chalk, compound powder of ipecacuan, and antimonial powder—at 3 p.m. and again at 9 p.m. She had a restless night and talked in her sleep.

On Feb. 24 (5th day) the morning temperature was 104°. The patient was hot, flushed, and restless, constantly tossing to and fro in bed. Dulness was rapidly increasing all over the left lung, and evidences of collateral hyperæmia were showing in the right lung. Three five-grain doses of quinine were prescribed to be taken during the day. I paid her a second visit at 2 p.m., and found her so congested and livid that I resolved to ask my colleague, Dr. Smyly, to perform venesection. At 6 p.m. we met in consultation, and we agreed that the rapidly-increasing congestion and thumping rapid pulse indicated the adoption of that remedy. Accordingly Dr. Smyly took 6 ounces of extremely hyperinotic blood from the left median cephalic vein. The blood clotted instantly and could in consequence with difficulty be measured. At Dr. Smyly's suggestion I ordered an ounce of the following mixture to be taken every third hour, viz.:—

℞. Ammonii carbonatis. gr. 24.
Sodii bicarbonatis, gr. 120.
Spiritus chloroformi, ℥i.
Aquæ, ad ℥vi.

M. ft. mistura.

The relief from the bleeding was almost instantaneous and most marked, the respirations falling to 47 from 54 per minute. The patient expressed herself much easier and passed a good night. Apyrexia was secured for 12 hours, although she was at times restless in her sleep. The bowels acted twice freely.

Feb. 25 (6th day).—The patient looked and felt wonderfully better, and took nourishment well. *Crepitus redux* was audible, and all signs of collateral hyperæmia had disappeared. The temperature rose to 102·4° at 4 p.m. Two doses of quinine (3 grains in each) were given, and the evening temperature was only 100°. The sputum underwent on this day a marvellous change. From being richly charged with blood-cells and pigment, it became colourless and less and less viscid. The patient was given egg-flip and a pint of milk through the ensuing night, and was practically convalescent next day, when she had custard for dinner.

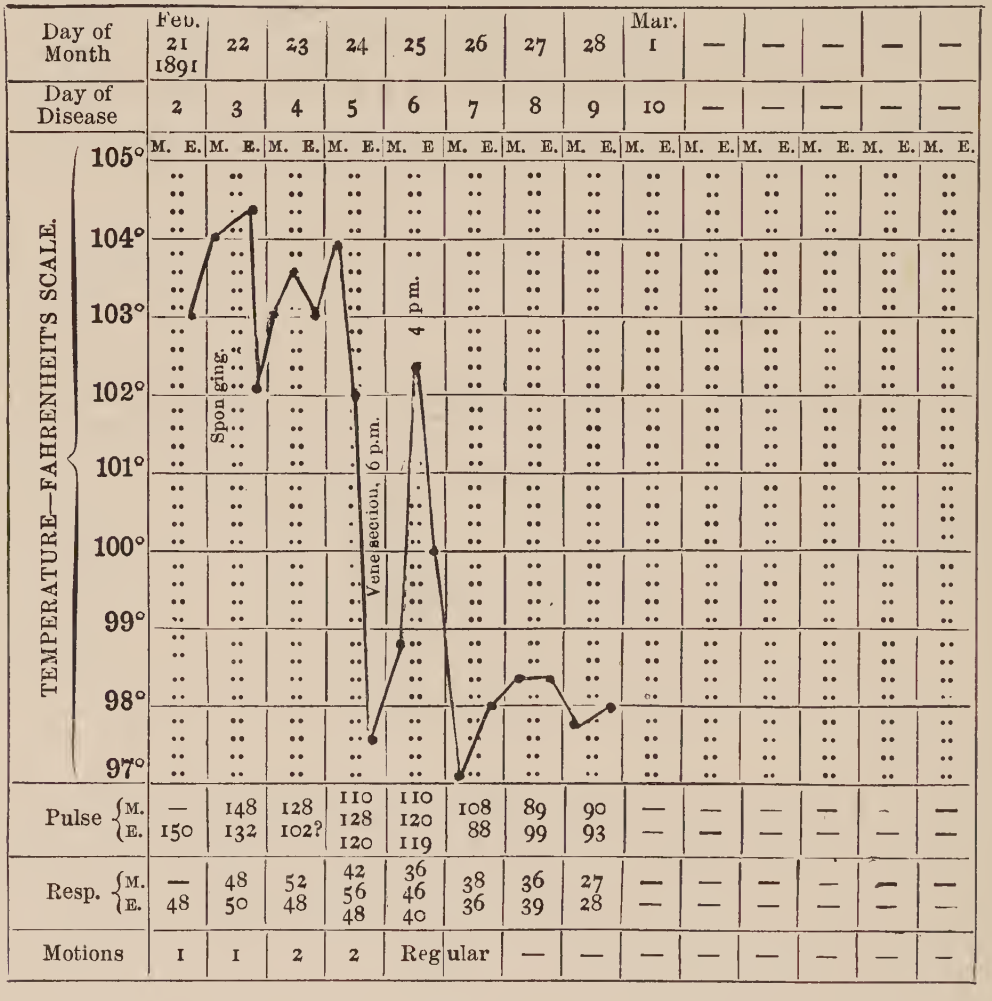
On Feb. 27 (8th day) the cough was rather troublesome, owing perhaps to the rapidity with which resolution was going on in the left lung, and its fuller and fuller inflation as it quickly expanded.

On Feb. 28 (9th day) the patient had fish for dinner; on the next

day, an egg for breakfast was succeeded by a dinner of chicken, and bread and butter for tea. On March 3rd she sat up for three hours, and continuing to improve daily, left Dublin for the country on Monday, March 9.

Chart of Temperature, &c.

Name, Georgie W.; *Age*, 10¾; *Disease*, Pneumonia; *Result*, Recovery.



SALIPYRIN.

M. Guttmann has been experimenting with salipyrin, which is a combination of salicylic acid and antipyrin. It is a white crystalline powder, odourless, but with a slightly acid, agreeable taste, readily soluble in alcohol, slightly so in water. It lowers temperature, and provokes sweat. The antithermic action continues for about four hours; it also seems to benefit remittent and continued fevers. For articular rheumatism it is almost a specific. Swelling and pain quickly disappear; equally good are its effects in neuralgia. M. Guttmann gives a gramme of the salt every hour until its therapeutic effect is obtained.—*Les Nouveaux Remèdes*, No. 20.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F. R. Met. Soc.; Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, March 28, 1891.

The deaths registered in each of the four weeks in the sixteen rincipal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	March 7.	March 14.	March 21.	March 28.		March 7.	March 14.	March 21.	March 28.
Armagh -	15·5	36·1	15·5	20·7	Limerick -	22·9	17·5	24·3	14·8
Belfast -	24·2	32·0	30·9	26·6	Lisburn -	9·7	33·8	38·7	19·3
Cork -	26·6	20·8	16·9	34·4	Londonderry	17·8	25·0	16·0	23·2
Drogheda	25·4	8·5	16·9	8·5	Lurgan -	25·7	46·2	46·2	30·8
Dublin -	27·6	27·2	27·6	28·4	Newry -	24·6	14·0	14·0	7·0
Dundalk -	56·7	13·1	8·7	21·8	Sligo -	24·1	28·9	14·4	33·7
Galway -	37·0	20·2	20·2	33·6	Waterford -	27·3	32·4	27·8	27·8
Kilkenny	29·6	21·1	8·5	8·5	Wexford -	29·9	17·1	29·9	25·7

In the week ending Saturday, March 7, 1891, the mortality in twenty-eight large English towns, including London (in which the rate was 23·4), was equal to an average annual death-rate of 23·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24·1 per 1,000. In Glasgow the rate was 28·3, and in Edinburgh it was 21·7.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 26·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·4 per 1,000, the rates varying from 0·0 in ten of the districts to 5·1 in Lurgan—the 5 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 109

deaths from all causes registered in Belfast are 3 from scarlatina, 2 from whooping-cough, 1 from diphtheria, 4 from enteric fever, and 4 from diarrhœa. The 12 deaths in Waterford comprise 1 from whooping-cough and 1 from diarrhœa.

In the Dublin Registration District the registered births amounted to 203—99 boys and 104 girls; and the registered deaths to 191—86 males and 105 females.

The deaths, which are 18 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·2 in every 1,000 of the estimated population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 27·6 per 1,000. During the first nine weeks of the current year the death-rate averaged 31·4, and was 1·7 under the mean rate in the corresponding period of the ten years 1881–1890.

Only 8 deaths from zymotic diseases were registered, being 16 below the average for the corresponding week of the last ten years, and 4 under the number for the week ended February 28. They comprise 1 from measles, 2 from diphtheria, and 1 from diarrhœa. No deaths from any of the forms of continued fever—typhus, enteric, or simple continued—were recorded.

Fifteen cases of enteric fever were admitted to hospital, against 9 for the preceding week. Twelve enteric fever patients were discharged, and 62 remained under treatment on Saturday, being 3 over the number in hospital at the close of the preceding week.

There were also 15 cases of measles admitted to hospital, being an increase of 10 as compared with the number of cases of that disease admitted during the preceding week: 10 patients were discharged during the week, and 14 remained under treatment on Saturday, being 5 over the number in hospital on the previous Saturday.

The hospital admissions for the week include, also, 1 case of scarlatina, but no cases of typhus were received.

Fifty-three deaths from diseases of the respiratory system were registered, being 1 over the average for the corresponding week of the last ten years, but 1 under the number for the week ended February 28. They comprise 38 from bronchitis and 9 from pneumonia or inflammation of the lungs.

In the week ending Saturday, March 14, the mortality in twenty-eight large English towns, including London (in which the rate was 20·7), was equal to an average annual death-rate of 22·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 26·2 per 1,000. In Glasgow the rate was 31·4 and in Edinburgh it was 22·3.

The average annual death-rate in the sixteen principal town districts of Ireland was 26·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·0 per 1,000, the rates varying from 0·0 in nine of the districts to 16·2 in Waterford—the 14 deaths from all causes registered in that district comprising 6 from whooping-cough, and 1 from diarrhœa. Among the 144 deaths from all causes registered in Belfast are 1 from typhus, 6 from whooping-cough, 3 from enteric fever, and 5 from diarrhœa.

In the Dublin Registration District the registered births amounted to 211—113 boys and 98 girls; and the registered deaths to 190—91 males and 99 females.

The deaths, which are 36 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·1 in every 1,000 of the estimated population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 27·2 per 1,000. During the first ten weeks of the current year the death-rate averaged 31·1, and was 2·0 under the mean rate in the corresponding period of the ten years 1881-1890.

Eleven deaths from zymotic diseases were registered, being 3 over the exceptionally low number for the preceding week, but 16 under the average for the 10th week of the last ten years. They comprise 3 from whooping-cough, 1 from diphtheria, and 4 from enteric fever.

The number of cases of enteric fever admitted to hospital is 11, being a decline of 4 as compared with the admissions for the preceding week, but 2 over the number for the week ended February 28. Eleven enteric fever patients were discharged, 1 died, and 61 remained under treatment on Saturday, being 1 under the number in hospital at the close of the preceding week.

Only 4 cases of measles were admitted, compared with 15 admissions in the preceding week. No cases of either scarlatina or typhus were received. Ten cases of measles, 6 of scarlatina, and 2 of typhus remained under treatment in hospital on Saturday.

Fifty-three deaths from diseases of the respiratory system were registered, being equal to the number for the preceding week, but 1 under the average for the tenth week of the last ten years. They comprise 31 from bronchitis, 13 from pneumonia or inflammation of the lungs, and 3 from croup.

In the week ending Saturday, March 21, the mortality in twenty-eight large English towns, including London (in which the rate was 20·3), was equal to an average annual death-rate of 21·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was

25·9 per 1,000. In Glasgow the rate was 32·2, but in Edinburgh it was 23·0.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 26·0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·8 per 1,000, the rates varying from 0·0 in seven of the districts to 5·2 in Armagh—the 3 deaths from all causes registered in that district comprising 1 from scarlatina. Among the 139 deaths from all causes registered in Belfast are 1 from small-pox, 1 from scarlatina, 4 from whooping-cough, 4 from enteric fever and 2 from diarrhœa. The medical certificate regarding the death from small-pox did not state whether the deceased person had been vaccinated. The 26 deaths in Cork comprise 1 each from diphtheria, enteric fever, and diarrhœa; and the 12 deaths in Waterford comprise 2 from whooping-cough.

In the Dublin Registration District the registered births amounted to 201—117 boys and 84 girls; and the registered deaths to 192—93 males and 99 females.

The deaths, which are 18 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·4 in every 1,000 of the estimated population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 27·6 per 1,000. During the first eleven weeks of the current year the death-rate averaged 30·8, and was 2·1 under the mean rate in the corresponding period of the ten years 1881–1890.

Seventeen deaths from zymotic diseases were registered, being 6 over the low number for the preceding week, but 5 under the average for the 11th week of the last ten years. They comprise 5 from whooping-cough, 2 from diphtheria, and 4 from enteric fever.

Eleven cases of enteric fever were admitted to hospital, being equal to the number of admissions for the preceding week. Twenty-two enteric fever patients were discharged, 1 patient died, and 49 cases remained under treatment on Saturday, being 12 under the number in hospital on Saturday, March 14.

The admissions for the week include, also, 4 cases of measles and 1 case of typhus: 6 cases of the former and 3 of the latter disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which in each of the two weeks preceding amounted to 53, fell to 43, or 7 below the average for the corresponding week of the last ten years. They comprise 31 from bronchitis and 6 from pneumonia or inflammation of the lungs.

In the week ending Saturday, March 28, the mortality in twenty-eight large English towns, including London (in which the rate was 19·3), was equal to an average annual death-rate of 21·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 26·7 per 1,000. In Glasgow the rate was 32·8 and in Edinburgh it was 25·7.

The average annual death-rate in the sixteen principal town districts of Ireland was 26·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·2 per 1,000, the rates varying from 0·0 in ten of the districts to 10·3 in Armagh—the 4 deaths from all causes registered in that district comprising 2 from whooping-cough. Among the 120 deaths from all causes registered in Belfast are 2 from scarlatina, 3 from whooping-cough, and 1 from diphtheria. The 53 deaths in Cork comprise 1 from enteric fever and 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 186—100 boys and 86 girls; and the registered deaths to 197—101 males and 96 females.

The deaths, which are 25 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 29·1 in every 1,000 of the estimated population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 28·4 per 1,000. During the first twelve weeks of the current year the death-rate averaged 30·7, and was 2·2 under the mean rate in the corresponding period of the ten years 1881–1890.

Only 10 deaths from zymotic diseases were registered, being 7 under the number for the preceding week and 15 under the average for the 12th week of the last ten years. They comprise 3 from whooping-cough, 3 from enteric fever, and 2 from diarrhœa.

Thirteen cases of enteric fever were admitted to hospital, being 2 over the admissions for the preceding week. Eight enteric fever patients were discharged, and 54 remained under treatment on Saturday, being 5 over the number in hospital at the close of the preceding week.

The hospital admissions include, also, 3 cases of measles and 1 of typhus: 5 cases of the former and 3 of the latter disease remained under treatment in hospital on Saturday.

No cases of scarlatina have been admitted during the last three weeks, and there were but 2 cases of the disease in hospital on Saturday.

Forty-eight deaths from diseases of the respiratory system were registered, being 5 in excess of the number for the preceding week, but 4 under the average for the 12th week of the last ten years. The comprise 39 from bronchitis and 7 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of March, 1891.

Mean Height of Barometer, - - -	29·858 inches.
Maximal Height of Barometer (on 3rd, at 7 p.m.),	30·470 „
Minimal Height of Barometer (on 15th, at 3 p.m.), -	29·052 „
Mean Dry-bulb Temperature, - - -	40·6°.
Mean Wet-bulb Temperature, - - -	37·9°.
Mean Dew-point Temperature, - - -	34·3°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·202 inch.
Mean Humidity, - - - - -	78·6 per cent.
Highest Temperature in Shade (on 1st) - -	57·9°.
Lowest Temperature in Shade (on 12th), - -	27·1°.
Lowest Temperature on Grass (Radiation) (on 12th),	21·6°.
Mean Amount of Cloud, - - - -	50·4 per cent.
Rainfall (on 16 days), - - - -	·936 inch.
Greatest Daily Rainfall (on 14th), - - -	·220 inch.
General Directions of Wind, - - -	W., N.W., N.

Remarks.

Opening with a long-continued westerly gale, March, 1891, proved very severe, cold, and showery. The night temperatures were particularly low at most inland stations. The most remarkable features of the month were the destructive "blizzard" of the 9th and 10th in the English Channel, and the fact that the mean temperature in Dublin was no less than 3° below that of February.

In Dublin the arithmetical mean temperature (41·7°) was considerably below the average (43·1°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 40·6°. In the twenty-six years ending with 1890, March was coldest in 1867 and 1883 (M. T. = 39·0°), and warmest in 1868 (M. T. = 47·3°). In 1876 the M. T. was 41·1°, in 1879 (the cold year) it was 42·5°, in 1888 it was as low as 39·8°, in 1889 it was 44·0°, and in 1890 it was as high as 45·1°. As a general rule, February in Dublin is only a shade colder than March. This is due to the fact that the Continental anticyclone usually embraces the British Isles and Scandinavia in March, causing easterly winds. In the present year, however, February was actually 3·0° warmer than March!

The mean height of the barometer was 29·858 inches, or 0·058 inch below the corrected average value for March—namely, 29·916 inches. The mercury rose to 30·470 inches at 7 p.m. of the 3rd, and fell to 29·052 inches at 3 p.m. of the 15th. The observed range of atmospherical pressure was, therefore, 1·418 inches—that is, nearly an inch and a half.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 40·6°, or 3·0° below the value for February, 1891. Using the formula, *Mean Temp.* = *Min.* + (*max.*—

min. × ·485), the M. T. becomes 41·5°. The arithmetical mean of the maximal and minimal readings was 41·7°, compared with a twenty-five years' average of 43·1°. On the 1st the thermometer in the screen rose to 57·9°—wind, W.S.W.; on the 12th the temperature fell to 27·1°—wind, W. The minimum on the grass was 21·6°, also on the 12th.

The rainfall was only ·936 inch, distributed, however, over 16 days. The average rainfall for March in the twenty-five years, 1865–89, inclusive, was 2·061 inches, and the average number of rainy days was 16·5. The rainfall, therefore, was much below the average, while the rainy days were slightly below it. In 1867 the rainfall in March was very large—4·972 inches on 22 days; in 1888, 3·753 inches fell on 18 days; in 1866 also 3·629 inches fell on 21 days. On the other hand, in 1871, only ·815 inch was measured on 12 days, and in 1874 only ·953 inch fell, also on 12 days. In 1887 (the "dry year"), 1·485 inches of rain fell on 15 days; in 1889, 1·076 inches fell on, however, as many as 17 days; and in 1890 the fall was as much as 3·693 inches on 17 days.

The atmosphere was foggy on the 12th, 13th, 14th, and 31st. High winds were noted on 14 days, reaching the force of a gale on 5 days, the 3rd, 4th, 5th, 6th, and 25th. Snow or sleet occurred on the 7th, 8th, 10th, 12th, 25th, 26th, and 27th; and hail fell on the 2nd, 7th, 8th, 10th, 11th, 13th, 16th, 26th, and 30th. The temperature exceeded 50° in the screen on only 9 days, compared with as many as 14 days in February, and 19 days in March, 1890; while it fell to or below 32° in the screen on as many as 10 days, compared with only 2 days in February and only 4 days in March, 1890. The minima on the grass were 32°, or less, on 20 nights, compared with 17 nights in February, and 16 nights in March, 1890. On 3 days the thermometer did not rise to 40° in the screen.

The chief feature of the period ending on Saturday, the 7th, was a singularly persistent westerly gale, which depended upon the passage eastwards across Northern Europe of a series of very deep atmospherical depressions, while an anticyclone held over the Bay of Biscay and France. In Dublin the wind blew freshly from points between W.S.W. and W.N.W. almost continuously until the afternoon of Friday, the 6th, when it moderated, and a copious rainfall occurred, yielding ·130 inch. A great "chill" passed south-eastwards over Western Europe on Friday and Saturday. On Monday evening there was a sharp squall of rain and hail, and on the following day also passing showers fell at intervals. During the week barometrical gradients were often very decided and steep over Western Europe—for example, at 8 a.m. of Monday, the 2nd, the barometer varied from 28·31 inches at Bodö (in the N.W. of Norway) to 30·33 inches in Brittany and 30·38 inches at Biarritz (in the S.W. of France). The mean pressure at 8 a.m. for the week was—at Bodö, 28·861 inches, but at Valentia Island, in Kerry, 30·286 inches. This fact will convey a good idea of the steepness of the baric gradients and the result-

ing force of the westerly wind. In Dublin the mean height of the barometer was 30·087 inches, pressure ranging from 30·470 inches at 7 p.m. of Tuesday (wind W.N.W.) to 29·658 at 9 p.m. of Saturday (wind W.). The corrected mean temperature was 46·5°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 45·5°. The shade thermometer rose to 57·9° on Sunday, the 1st. The rainfall amounted to ·160 inch on three days. The prevailing wind was westerly. Snow fell on the Dublin mountains on Saturday afternoon.

The second was a very severe week—in Dublin as cold as the coldest of the whole winter, but otherwise fine; in southern England notable for one of the greatest snow storms and tempests on record, caused by the passage up the English Channel of a complex depression, with two minima, in the interval between Sunday, the 8th, and Wednesday, the 11th. This system produced violent E. to N.E. gales and heavy falls of snow all over the S.W., S., and S.E. of England—the bad weather culminating in a disastrous and fatal "blizzard" on the night of Monday, the 9th. At this time the sky became overcast in Ireland with a canopy of cirriform cloud moving rapidly in an upper current from S.W., while the wind freshened somewhat from E., but the disturbance passed by harmlessly, and only a few snow and hail showers fell from time to time. Very severe frosts were, however, felt at night—the minima at Parsonstown being 21°, 22°, 25°, 18°, 19°, 19°, and 21°. In France warmer weather was experienced, the wind blowing freshly from S. and S.W., and heavy rains falling generally. In Dublin the mean height of the barometer was 29·757 inches. The corrected mean temperature was 35·4°, or exactly the same as that of the week ending January 10th, 1891. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 34·3°, or 11·2° below the corresponding value in the previous week. The screened thermometers rose to 46·0° on Saturday, having fallen to 27·1° on Thursday; until Wednesday the temperature in the shade did not reach 40°. The prevailing wind was north-easterly. Rainfall was measured on three days, the total amount being ·266 inch, of which ·036 inch fell as snow and hail on Sunday, the 8th, and ·220 inch as rain in the early morning hours of Sunday, the 15th.

Although still cold and changeable, the weather of the week ended Saturday, the 21st, showed a distinct improvement upon that of the previous week. During the first three days conditions were specially unsettled owing to the passage of a deep atmospherical depression southwards across Ireland to the Bay of Biscay and the Peninsula. At 8 a.m. of Sunday, the 15th, the barometer read only 29·01 inches at Malin Head, and 12 hours later it sank to 28·88 inches at Mullaghmore, Co. Sligo. Rain fell heavily at this time in many parts of the British Islands, and the wind shifted from S.W. to N.E. and E. as the centre of the depression travelled southward. After Sunday winds from polar

quarters (E., N.E., and N. to N.W.), held throughout the week. The nights were often clear and frosty; the days were chiefly dry and cool, with clouds at times and cold showers in places. This was particularly so on Friday, when a V-shaped depression, subsidiary to a large system of low pressure over Northern Europe, passed southwards over Great Britain. In Dublin the mean height of the barometer was 29·750 inches, pressure ranging between 29·052 inches at 3 p.m. of Sunday (wind, S.) and 30·061 inches at 9 a.m. of Saturday (wind, N.). The corrected mean temperature was 41·6°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 41·8°. The rainfall equalled ·188 inch, on four days. The prevailing winds were N.E. and N.

The record of the fourth week, ending Saturday, the 28th, is again one of unsettled, generally cold, weather—the prevailing "set" of wind and cloud over North-western Europe being from points between W. and N. Only on Tuesday, the 24th, and in the earlier part of Wednesday, the 25th, was the weather at all mild, and even then the wind blew strongly from S.W. and W. Indeed, on the latter day a fresh or strong westerly gale was felt over the greater part of Ireland. Towards night temperature fell fast, and falls of sleet and snow occurred, accompanied in places by thunder and lightning. Conditions remained very rough and inclement until the afternoon of Good Friday, when the weather moderated and became finer and drier. Saturday, although still harsh, was fine and chiefly sunny. The depression, which caused Wednesday's gale, was of great size and considerable depth—the barometer falling below 28·9 inches near the centre of the system. In Dublin the mean height of the barometer during the week was 29·789 inches. The corrected mean temperature was 42·4°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 41·3°. The rainfall, which was chiefly in the form of snow or sleet, amounted to ·303 inch, on four days.

Fresh N.W. winds blew on Easter Day, the 29th, and also on Easter Monday. These were followed by a very sharp frost on the morning of the 31st, the thermometer falling to 27·9° in the screen and to 22·7° on the grass.

The rainfall in Dublin during the three months ending March 31st has amounted to only 1·650 inches on only 32 days, compared with 7·470 inches on 45 days during the same period in 1890, 5·738 inches on 53 days in 1889, 6·097 inches on 41 days in 1888, and a twenty-five years' average of 6·411 inches on 51·0 days (1865-1889, inclusive).

At Knockdolian, Greystones, Co. Wicklow, 1·410 inches of rain fell on 14 days during March; and the total rainfall since January 1, 1891, equals 2·805 inches, on 30 days. At Cloneevin, Killiney, Co. Dublin, the rainfall in March was ·740 inch, on 13 days; while the total fall since January 1 has been 1·240 inches, on 26 days, compared with a six years' average (1885–1890, inclusive) of 6·060 inches, on 44 days, for the first quarter of the year.

PERISCOPE.

INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY. SECTION II.—BACTERIOLOGY. LABORATORY AND MUSEUM.

THE following gentlemen have already consented to send objects of interest to the Museum or to demonstrate in the Laboratory :—

Dr. Adams	Prof. Frankland	Dr. Plowright
Dr. Andrewes	Mons. Gamaleïa	Dr. D'Arcy Power
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M. Armand Ruffer, *Hon. Sec.*

March 28, 1891.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Clinical Slate.

Messrs. Fannin & Co., of 41 Grafton-street, Dublin, have—at the suggestion of Dr. Henry Davy, B.A., of Kimmage—introduced a novel aid to clinical study in the form of a "Clinical Slate." This useful invention is intended for clinical clerks or nurses. One side of the slate is plain, and on it full notes of a patient's case can be entered. The other side is ruled off into columns for hourly observations—if need be—as to the administration of medicines, stimulants, and food; the condition of the pulse, respiration, and temperature; the amount of sleep, action of the bowels, and quantity and density of the urine. There are also columns for general directions and management of the case.

The slate is of superior finish, and is stated to have been "made in Bavaria." We would suggest the addition of a side pocket for a slate pencil, and of a piece of sponge for rubbing out the observations, when they are no longer required, or have been transcribed into a note-book in a more permanent form. With these additions the "Clinical Slate" is sure to become a favourite in both hospital and private practice.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XX.—*Puerperal Fever: its Nature, Prevention, and Treatment.* By JOHN W. BYERS, M.A., M.D.; Physician for Diseases of Women to the Royal Hospital, Belfast; Physician to the Belfast Hospital for Sick Children; Examiner in Midwifery, and in Diseases of Women and Children, to the Royal University of Ireland; Fellow of the Obstetrical Society of London, and Fellow of the British Gynæcological Society.

(*Continued from page 420.*)

2. *Prevention of Puerperal Fever.*—Those of you who have followed the recent discussions on abdominal surgery will have observed that one class of operators aim at preventing the ingress of the micro-organisms, while the other use all their precautions—by thoroughly cleansing the peritoneum and by drainage—to prevent any organic material being left behind on which the bacteria can grow and develop. Antiseptic midwifery aims at carrying out both these ideas, and even more—it has as its objects three things:—

1. To prevent the introduction of germs into the body, this being carried out by antiseptic cleanliness of the hands, instruments, &c.

2. To kill them in the body before they have got into the blood and tissues. This is done, especially in lying-in hospitals, by antiseptic douches; but in certain conditions they may also be needed in private practice.

3. To prevent any piece of placenta, blood-clot, &c., being left behind on which the germs, if by chance they gain admission, may act. This is carried out by a proper management of the third stage of labour, by taking the utmost precaution that nothing is left behind (placental remains, membrane, &c.), and by allowing patients to sit up for a short time, as soon as it is practicable, so as to facilitate drainage of the uterus and vagina.

In speaking of the prevention of puerperal fever, let me say a word or two on the following points:—

(*a*). *The Nurse.*—If all monthly nurses were thoroughly taught to believe in the contagiousness of puerperal fever, and if rigid antiseptic precautions were used in all those institutions in which they received their training, we feel sure they would soon come to see the immense importance of extreme cleanliness, and look upon the routine of the antiseptic methods not as a drudgery, but as an absolute necessity. A nurse who has an enthusiastic belief in strict antiseptic measures, is worth a dozen who simply carry out the precautions in a mechanical way. I have drawn up the following rules for the guidance of nurses:—

Rules for Monthly Nurses.

1. The nurse at the commencement of a confinement must prepare two vessels, each containing a pint of 1 in 1,000 corrosive solution. She will renew these at the termination of the labour, and every morning for the first week.

2. The one basin is for rendering aseptic any syringe, rectal or vaginal pipe, bed-pan, &c., which may be required for the patient's use. The other basin is for rinsing the hands on *every* occasion previous to touching the genital organs of the patient, and for washing the genitals.

3. She must not touch, or make any application whatever to a patient, without first thoroughly washing her hands in soap and water (using the nail-brush), then washing them in plain water, and finally rinsing them in the corrosive solution.

4. Before making any vaginal examination she must, after attending to the directions in 3, smear the finger with corrosive vaseline.

5. No sponges are to be used for cleansing the genitals, but, on the contrary, Hartmann's wood-wool tissue, salicylic wool, or ordinary cotton wool. A fresh piece, previously wrung out of the corrosive solution, is to be used each time, and then thrown away;

on no account must it be dipped a second time into the solution after having been used.

7. All vaginal pipes (glass), catheters, &c., should be rinsed in the corrosive lotion and then smeared with corrosive vaseline before being used, and always before the catheter or vaginal or enema pipe is used the external genitals are to be cleansed with the corrosive lotion.

8. All diapers or other articles, when used, shall be removed out of the room as soon as possible.

9. The perchloride or corrosive lotion is to be made by adding one of the following powders (Cullingworth's powder) to a pint of water (℞. Hydrarg. perchl., gr. 10; acid tartaric, gr. 50; pulv. cocci, gr. 1), or by adding one teasponful of the following solution to a pint of water:—

℞. Hydrarg. perchl., gr. 154.
Glycerin., ʒ ij.
Acidi Hydrochlorici diluti, ♏. 77.

The sublimated vaseline is of the strength of 2 grs. to the ounce.

The greatest attention should be paid to the preparation of the hands. The soap and water and nail-brush remove the dirt and grease. The rinsing in plain water is to get rid of the soap, the presence of which would render the action of the corrosive inert, while the final wash in the corrosive solution is to make the hands antiseptic.

(β). *The Accoucheur.*—In his management of a case, the medical attendant should adhere to all those precautions laid down for the guidance of the nurse. He should make as few examinations as possible, and he should be most careful in his management of the third stage—that is, to follow down the uterus during the birth of the child's body, and to express the placenta, and then to keep up firm pressure for some time before putting on the binder. Further, it is a most useful precaution, as against the introduction of air, to make the patient lie on her back as soon as the child is born; a firm application of the binder acts in the same way. If there is any laceration of the perinæum it should be stitched. The plan I like best is to place some lint soaked in the antiseptic solution in the vagina, then carefully to use a hot sublimate douche to the parts, and stitch the torn edges by means of a curved perinæum needle and silkworm gut. In this operation the best position for the patient is the dorsal one. Hartmann's sublimate wood-wool diapers are, I think, better than ordinary napkins wrung out of antiseptic

solution. When the perinæum is being dilated, its stretching may be facilitated by employing wood-wool tissue wrung out of hot corrosive lotion, and by lubricating it with the antiseptic vaseline. Should any of the membranes be retained, they should certainly, at the time of the labour, be removed. If the patient has had a natural labour she should be encouraged, after the second day, to sit up for a few minutes occasionally, so as to facilitate the escape of the discharges, and at times to pass water in the knee-elbow position.

(γ). *Question of Douches.*—In lying-in hospitals the routine use of the corrosive douche has given the best results, but in private practice its employment is not called for as a routine except under certain circumstances, and then it must be used only by a competent person. A douche of 1 in 4,000 corrosive should be given before the child's birth, under the following circumstances:—

1. If a nurse has examined the patient without using the precautions which have been given.

2. If there is a purulent or muco-purulent discharge from the vagina. This is done alike in the interest of the mother to prevent sepsis, and of the child to ward off the onset of ophthalmia neonatorum. After a difficult labour—a prolonged labour—after instrumental delivery, and in every case in which the hand is introduced into the uterus for turning or removing the placenta, a 1 in 4,000 hot corrosive douche should be given, and also to syringe out the vagina immediately after an ordinary confinement. The experience of bacteriologists, as well as that gained in lying-in hospitals, have clearly demonstrated that corrosive sublimate is the best antiseptic we have. As, however, it has been shown that there is risk attending its use, I do not think it should be employed as a routine after delivery in private practice—it should be used only by the medical attendant, or by a competent nurse at his suggestion. In using it care should be taken—by pressure with one hand above the uterus, and by holding the perinæum back with the other, to prevent ballooning of the vagina—to avoid leaving any of the fluid behind. It should always be used hot, so as to cause contraction of the uterus; and under the following conditions it should not be employed—

(*a.*) In those with renal disease.

(*b.*) In the anæmic, say after hæmorrhage, in whom absorption is very apt to occur more readily. If, while using the sublimate douches, there is the least diarrhœa or soreness of the gums, the douches should at once be abandoned, and bismuth prescribed, as

well as saline aperients, and plenty of fluids. In Dr. Boxall's interesting paper, "Fever in Childbed," the enormous advantage of corrosive sublimate as an antiseptic at the General Lying-in Hospital is proven, and it is shown that while during a short period, eight weeks, salufer washing and douching (silico-fluoride of soda, 1 in 500 = gr. 20, ad Oj.) of the patients were employed in place of the sublimate, two deaths occurred from septic poisoning, and further, during this same period three additional cases of septic fever occurred, whereas immediately before salufer was introduced, and after it was abolished, no such case occurred when the sublimate was the antiseptic used. For washing hands, cleansing the patient, instruments, and articles employed by the nurse, corrosive solution, 1 in 1,000, is absolutely safe and by far the best antiseptic, and in the majority of cases of natural labour in private practice the regular use of douches of any kind is not necessary, but the corrosive lotion should be regularly used to bathe the external genitals. If douches are needed afterwards, then the corrosive ones are the best.

Antiseptic precautions are to be specially rigidly employed in the case of primiparæ, as they are prone to sepsis for three reasons—

1. Tearing and bruising of the parts are liable to occur;

2. From the delay in the labour, examinations are more frequent; and—

3. Instrumental interference is more often necessary.

In what I have said in reference to the conduct of the accoucheur and of the nurse, I have urged the extreme importance of not making too frequent vaginal examinations. The great thing is to make the first examination as thorough as possible, and to avoid any further, unless absolutely necessary. I would urge upon my professional brethren the great value of abdominal palpation during labour. Its importance and assistance during pregnancy we all know from experience, but its special value and help during labour lie in this, that the more it is used the less will it be necessary to make internal examinations. Women who enter a lying-in hospital, after delivery rarely suffer from puerperal fever, because, through not being examined, they have avoided the risk of having the germs of the disease conveyed to them; while, on the other hand, one of the reasons why women with slow and tedious labours and primiparæ often develop puerperal fever is the frequency of vaginal examinations. Leopold (*Archiv. für Gyn.*, Band. XXXV.) states that at the Dresden Lying-in Hospital, during the years 1886, 1887,

and 1888, 248 women were delivered without any medical aid. They were neither examined, nor touched, nor syringed. Of these 98 per cent. had no fever during the puerperium. Five only of the patients had febrile symptoms, and they were slight.

Objections have been brought against these antiseptic precautions on many grounds. Some say such arrangements can be carried out only in better-class practice, but that it is impossible to do so in the case of the poor who have no nurse; but, on the other hand, antiseptic measures can be so simplified as to cost very little, and any person with even a small share of intelligence can carry out the details as the doctor directs. Two things can easily be done—1st, the medical man can render his hands and instruments antiseptic, as a few corrosive powders, or a bottle of the concentrated glycerine corrosive solution and a nail-brush, can easily be carried in his bag; and further, he can train any friend or neighbour to bathe the genitals of the lying-in woman with the antiseptic solution twice or thrice daily; no douching is needed. Again, it is said by some that they do not meet with cases of puerperal fever in their practice, and that midwifery fees are so low they would not pay the time or trouble expended in carrying out the antiseptic system. To this I would reply that statistics show that, without antiseptic precautions, the disease is sure to occur sooner or later, and even if patients have not died of the malady with some fortunate doctors, have they been free from chronic pelvic diseases following their confinements? Even should one septic case occur in any man's practice, it surely entails more attendance and anxiety from the risk of its being carried to other lying-in women, that the trouble of the antiseptic precautions is in comparison a mere trifle.

The use of antiseptic precautions is as necessary in country as in town practice. From the fact that a hard-worked and busy medical man in the country has to be surgeon, physician, and accoucheur, he is obliged—often in the same day—to open foul abscesses, dress offensive wounds, see cases of erysipelas, and attend a confinement. If he employs antiseptic methods, he has the feeling that he has taken every precaution he can for his lying-in patients, and his chances of seeing cases of puerperal fever will be very much minimised. In this connection I may state that "The Abstract (of the Decennial Summary of Births and Deaths for the years 1871–80) shows that in every union in Ireland deaths from puerperal fever were recorded."

After using instruments at a confinement, I think they are best

disinfected by washing them with soap and water—using a nail-brush—and then leaving them some time in a vessel in which they are covered with boiling water. They can then be carefully dried.

3. *Treatment of Puerperal Fever.*—From the view I have taken as to the nature of puerperal fever, it follows that I regard local treatment as of the utmost value in the management of this disease; but I cannot insist too much on the great importance of its being done early. I am afraid too many of us in the past have waited, when our patients became feverish after childbirth, in the hope that we had merely an attack of so-called "milk-fever," or that the constitutional disturbance present was due to a "chill," the result of cold, until the persistence of the illness and the failure of diaphoretics and quinine showed clearly that the complaint was puerperal fever, and so unfortunately the time for which there might have been hope for local treatment has been allowed to pass. In any case, therefore, in which fever sets in after confinement—in which there is no obvious local cause to explain its occurrence—I am a strong advocate of disinfecting the genital tract. This can best be done by using a 1 in 4,000 corrosive douche. A few precautions may be useful as to the employment of the douche:—

1. The patient is best kept on her back.

2. The douche should be given hot, so as to stimulate the uterus to contraction, and the antiseptic solution and the water should be well mixed before being added to the douche reservoir.

3. The intra-uterine tube should either be in the form of a double-channelled catheter (Bozeman's), or a grooved glass tube, so as to provide for a return current, and to prevent the possibility of distension of the uterus.

4. Before using the douche the external genitals are to be washed with wood-wool, squeezed out of the 1 in 1,000 corrosive solution, the vulva is then to be syringed, then the vagina, and while the fluid is still running the tube is to be passed into the uterus. The uterus should be grasped firmly by one hand, and at the end of the operation, when the tube is withdrawn, it should be squeezed firmly from the abdomen, and pressed downwards, so as to drive the fluid not only out of the interior of the uterus, but out of the vagina. Further, to prevent any accumulation of fluid through "ballooning" of the vagina, and possible hydrargyrismus, the perinæum should be drawn backwards by the tube, so as to let

the fluid all drain away. By asking the patient to cough she will assist in the expulsion of any fluid.

5. The reservoir for the douche must not be more than a few feet above the level of the patient. Some have said that the uterus should be washed out after delivery only under the following conditions:—pyrexia, with fœtid discharge; retained placenta or membranes after birth of a putrid fœtus; but I would advise it in any case of fever setting in after labour. In cases in which sublimate douching is regularly employed it is well, as Boxall has pointed out, to encourage its elimination (in case of absorption) by the kidneys, by giving a copious supply of liquids (lemonade), and still more through the intestines, by giving saline aperients, as a drachm of sulphate of magnesium thrice daily. While fœtor of the lochia is a strong indication for the douche, yet, on the other hand, we may have a patient becoming poisoned in sapræmia, or dying from septicæmia, and yet no foul odour may be detected on vaginal examination. I have seen cases frequently which set in with a rigor and high temperature on the third day yield to this form of treatment. Among these I find from my note-books there were cases of dead fœtus, retained membranes, pieces of placenta, &c.; but in several there was nothing brought away, and there was no bad odour from the vagina; the indication for the douche was the sudden onset of fever. They were probably cases of sapræmia in which the douche did its good by destroying the micro-organisms, as well as the poison evolved in their growth. Sometimes, in case the temperature rises, the douche has to be repeated, say twice in the twenty-four hours. When there is a fœtid discharge, and the douche has washed away a piece of placenta, or a portion of membrane, or in cases in which such matters have been removed by manual extraction, after employing the douche, I have found the use of Ehrendorfer's iodoform bougies of considerable service. These are made about the size and shape of the little finger; each contains 100 grs. of iodoform made up with glycerine, gum acacia, and starch. After washing out the uterus, they are introduced by means of a pair of forceps up to the fundus. In their gradual melting they will, it is said, keep the genital tract aseptic for three or four days. I have used these iodoform bougies in several cases with advantage. There is still another form of local treatment which I employed with signal advantage in a very bad case of septicæmia last May. The lady, on the third day after her first confinement, had a severe chill, followed by high fever and grave constitutional disturbance.

Sublimate intra-uterine douches caused a slight fall in the temperature, but neither they nor the internal administration of quinine, antipyrin, salicylate of sodium, or Warburg's tincture seemed to have much effect on the general course of the disease, until I used the curette. After scraping the interior of the uterus, and using the douche, a quantity of debris, apparently diseased endometrium, came away, and a decided change in the patient's condition set in, which eventually culminated in recovery. Since then I noticed that von Braun-Fernwald (*Arch. für Gyn.*, Band XXXVII.) has written a paper, in which he states that out of 7,600 women delivered in the Vienna clinic the uterus was scraped in 101 cases, and of these, while 5 died, 96 recovered. He gives the following as the indications for curetting of the puerperal uterus :—1. Early onset of fever. 2. Deficient involution of the uterus. 3. Lochia of unnatural colour, offensive, and often containing fragments of decomposing tissue. In my case I simply curetted and washed out the uterus afterwards, but Braun-Fernwald advises that, after the curetting and washing out, the uterus should be compressed between the hands to cause contraction. A piece of iodoform gauze, soaked in tincture of iodine, is passed into the uterine cavity. If there are any fissures in the vagina, they are painted with tincture of iodine, and the vagina is packed with iodoform gauze. The patient is put back to bed and given brandy, and locally over the uterus an ice bag is applied. At the end of twenty-four hours he removes the gauze plugs, and afterwards the vagina is washed out once in twenty-four hours with an antiseptic solution. Chantemesse (*Progrès Médical*, Mars 29 and Mai 10, 1890) advised, in the treatment of puerperal fever, if the washing out of the uterus with corrosive fails to relieve, that the uterine wall should be curetted, swabbed with a 10 per cent. chloride of zinc solution, and plugged with a strip of iodoform gauze. Any swelling or tenderness on either side of the uterus, or any fixation of that organ, contra-indicates local treatment applied to its interior. If there are any foul or diphtheritic-looking sores in the genital canal, these are treated by the local application of iodoform in powder or in ointment. The previous removal of any sloughing tissue, or the touching of the sore with a strong caustic, is often of use. Local treatment, such as I have recommended, will not, unfortunately, succeed in all cases. The poison of septicæmia is often too virulent and too active in its effects, but I am confident of one thing, that in the treatment of puerperal fever local measures have been far

too much neglected. It has been well said by Spiegelberg—"If we could thoroughly expose those organs (the genital), and thus render them freely accessible, we should doubtless, in the majority of cases, be able to prevent the further extension of the infection by energetic local measures."

When local measures fail, or when they have not been tried, our aim is to sustain the patient in her fight with the disease, and to attack symptoms as they arise. In such circumstances all of us know the bad prognosis in many cases. We give as much concentrated nourishment in the liquid form as the patient can take—beef-tea, meat-jellies, eggs, milk, &c.—alcohol if the pulse is weak, and opium if there is pain, with the local application of poultices, and anodyne fomentations for localised tenderness. We may attack the fever with cold applications, cold or tepid baths, and the internal administration of quinine. I have not seen much benefit from antipyrin, salicylate of sodium, tincture of aconite, sulpho-carbolate of sodium, turpentine, or Warburg's tincture. In my own experience the best line of general treatment in such cases is to endeavour, by plenty of nourishment and stimulants, to keep up the patient's strength, to give quinine, and to use cold applications for the fever, to allay pain with opium, and to open freely and drain any local accumulations of matter. I have no experience of opening the abdomen for general puerperal peritonitis. It has been done by making a small incision, introducing a gum-elastic catheter, or nozzle of a douche, so as to wash out thoroughly the peritoneal cavity with warm water; but so far the results have not been very brilliant.

In connection with obstetric practice, the question is being frequently debated in the medical journals, "How soon after being exposed to an infectious disease may a practitioner take charge of a confinement?" Dr. French, Minneapolis, sent a memorandum asking, "How soon after exposure to sepsis may the accoucheur safely resume practice?" to a number of the leading members of the profession in America and Europe. Some replied (Thornton, Savage, Hegar) that time was a necessary factor, accompanied, of course, by thorough cleansing; while others (Emmet, Thomas, Marey, Battey, Goodell, in America, and Martin, Schroeder, Volkmann, Nussbaum, and Esmarch, on the Continent) replied that time was non-essential, and that thorough disinfection can be at once accomplished. Esmarch, in his letter to Dr. French, writes as follows:—"If you have thoroughly disinfected yourself,

you can immediately enter upon obstetric practice. Time does not destroy septic dirt." Before the use of antiseptics in midwifery, if a practitioner came across a case of erysipelas, scarlet fever, abscess, &c., he was advised to give up his obstetric practice for a time—a very comforting piece of advice to a struggling medical man, and all the more galling when he observed, if it were a consulting physician who tendered this opinion to him, that the latter did not hesitate to see cases of scarlatina, measles, or pneumonia, in the same day; while if it were a surgeon who recommended the same course, he did not give up his practice for a time, or hand over his operations to another, if he chanced to have a case of erysipelas or pyæmia. Further, in many country districts it is impossible for the general practitioner to take such a course. My own opinion is that a thoroughly conscientious man may, after having attended an infectious or septic case, if he change all his clothes, if he take a warm or Turkish bath, and if he use most rigidly the antiseptic methods, soon resume obstetric work. Those who employ the antiseptic precautions will feel they have used every means to prevent the carrying of the contagion to their patients.

It has been said that the best way to prevent *post-partum* hæmorrhage is to act in every case as if its occurrence was imminent; as a result, those who now manage the third stage of labour in accordance with modern obstetric teaching have few cases of this complication. May I suggest, in conclusion, if in our midwifery practice we regard puerperal septicæmia as likely to develop, in every case we ought to take all precautions—first, to prevent the poison reaching the patient; and, secondly, to destroy the poison if it comes in contact with the patient before it enters her blood and tissues. This is the aim of antiseptic midwifery.

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Art. XXI.—*Histology of Tubercular Tissues treated by Koch's Tuberculin.*[a] By Edmond J. M'Weeney, M.A., M.D.

I have again to apologise to the Academy for a paper the title of which does not accurately represent its nature. My original intention was to lay before the Pathological Section some specimens of tubercular tissue from a case of tubercular dactylitis which had been treated for some time with tuberculin. Subsequently a patient died who had received some injections of the fluid at a late stage of chronic pulmonary phthisis, and it occurred to me that it would be well to place the histology of these two cases before the Academy of Medicine, together with a short *résumé* of the work done on the Continent with reference to the minute changes in the tissues of lymph-treated patients in general—a *résumé* which I trust will prove not uninteresting. It must be understood that I confine myself exclusively to the micro-anatomical changes and make no reference to the clinical symptoms.

[a] Read before the Section of Pathology in the Royal Academy of Medicine in Ireland, on Friday, April 3, 1891.

O. Israel (*Berlin. klin. Wochenschr.*, 1890, p. 1127), found in a patient who suffered from a peri-articular abscess, and who had received thirteen injections, that the wall of the abscess consisted of a layer of granulation tissue and of a layer of necrotic tissue. The former was composed of spindle cells, thin-walled vessels, and a few cells with nuclei undergoing division. In the neighbourhood were *mast-zellen* and giant-cells. There was a partial infiltration with multinuclear leucocytes. Bacilli were found scattered through the necrotic tissue, not at all in the living or giant cells. The interesting point about this case is that all reaction had completely ceased to follow the injections after they had been employed for five weeks, and yet the microscope as well as the inoculation test had revealed the presence of numerous bacilli.

Henoch and Rippert (in *Berliner* and *Deutsche med. Wochenschr.*, 1890), give cases of tubercular meningitis in which no microscopic changes in the tubercles could be detected; no cellular infiltration or other inflammatory change.

In the *Berliner klin. Wochenschrift* for 1890, p. 1174, Litten describes a lymph-treated case of tubercular ulceration of the gums. Great hyperæmia in the neighbourhood, followed by break-down of the affected tissue, was demonstrated, and, what is very remarkable, a fresh crop of miliary tubercles was detected in the immediate vicinity. Litten thinks they were dislodged from their original situations and scattered about.

Ewald is of the same opinion, for (in the *Berl. kl. Wochenschrift* for 1890, p. 1175), he says that the "Koch fluid stirs up the tubercular deposits just as the dog stirs up the badger in its lair."

Kromeyer (in the *Deutsche med. Wochenschrift* for 1890, p. 1138, and 1891, p. 305) publishes careful histological researches on the effect which the Koch treatment exercises upon lupous tissue. He excised a portion seven and a half hours after the injection, while the reaction was at its highest, and found an infiltration with polynuclear leucocytes around each tubercle, especially in the neighbourhood of the vessels, from which an abundance of fibrinous fluid had escaped, together with wandering cells. Many of the latter had found their way into the interior of the tubercle and even into the giant cells. The tubercles contained more round-cell elements than normal, but no partial necrosis affecting these structures was to be detected.

Riehl (in *Wiener klin. Woch.*, 1890, p. 51), examined a piece of lupous tissue after the second and the third injection, and found

abundant emigration of leucocytes into the tubercles and deposit of fibrin both in the tubercles themselves and in the vicinity.

Jacobi arrived at the same result after an examination of four pieces of lupous skin cut from the same patient at regular intervals, representing each stage of the process of reaction.

Jürgens (in the *Deutsche med. Wochenschr.*, 1890, p. 1,164), gives details of a curious case of phthisis with tubercular ulcers in the larynx and likewise in the stomach and intestines. None of the tubercles which appeared abundantly on the floor and sides of these ulcers contained any giant cells; and Jürgens thinks that these which occurred in the stomach were the result of a necrosis and purulent infiltration of small tubercular nodules which had originally lain deep in the substance of the mucous membrane. He also thinks that a general leucocytosis is caused by the lymph, and that the ultimate effect of this on tubercles and healthy body structures yet remains to be appreciated.

Rumpf (*Deutsche med. Wochenschr.*, for 1891, p. 106) gives two cases of pulmonary consumption, in one of which there was quite fresh pneumonic infiltration, in the other an outbreak of fresh tubercles in the pia mater.

Virchow's well-known paper (*D. m. W.*, 1891, p. 131) deals with the naked eye changes, but Hansemann, his assistant (in the *Therapeutische Monathshefte.*, Januar, 1891) divides the micro changes into three stages, of which the primary is characterised by hyperæmia, the secondary by local leucocytosis, the tertiary by necrosis, caseation of the old, and, unfortunately, sometimes by the outbreak of fresh, miliary tubercles.

To sum up the pathological histology of Koch-treated tissues we have—infiltration with leucocytes, fibrinous exudation not infrequently; sometimes the hyperæmia and infiltrated tissue appears to undergo necrosis, more often no signs of necrosis are met with; not infrequently fresh tubercles are found to have been formed, with either a local or a general distribution. The fresher the tubercle, the more miliary, so to speak, the less sign it shows of being affected by the injections.

Turning now to the cases I have myself had occasion to observe, the first is that of a girl :—

Case I.—M. K., aged twenty, who was admitted into the Mater Misericordiæ Hospital in last November, under the care of Mr. Hayes, suffering from a sore on the middle finger of the right hand. The finger was spindle-shaped, thickest part corresponding to the proximal inter-

phalangeal articulation, upon the ventral aspect of which there was a circular aperture in the skin, from which a fungus mass protruded about the size of a hazel nut. She gave no history of injury, but stated the finger had become sore, and finally, on being poulticed, "broke," upon which the mass of tissue just described made its appearance. She could not actively flex the finger at any joint. She received ten injections ranging from one to twelve milligrams of the lymph, after the first of which she reacted both locally and generally (to 101°). The local reaction consisted of reddening and swelling of the fungous mass, with serous exudation. Afterwards it appeared to become somewhat smaller, but ultimately the reactions became so slight and irregular, and the progress of the case so unsatisfactory, that recourse was had to the knife, and in December last the Senior House Surgeon, Mr. Staunton, removed the fungus mass, which adhered closely and appeared almost to infiltrate the flexor tendons.

I fixed some of it with Flemming's chromo-aceto-osmic mixture and placed the rest in absolute alcohol. After the fixation process was completed I transferred the piece from the Flemming to alcohol, and subsequently embedded in celloidin. I demonstrate two of the sections, one stained with Delafield's hæmatoxylin, and the other with the picro-lithio-carmine of Orth. They both show the tissue to be composed of numerous lymphoid cells lying in the meshes of a fibrous stroma. Here and there are tubercles containing typical centrally placed giant cells surrounded by epithelioid cells. These tubercles are extremely numerous, and close together, and exhibit no signs whatever of any retrogressive change. The only unusual feature they present is the extreme density and distinctness of the fibroid envelope in which each is enclosed. The high power shows this well.

After the operation the patient made a rapid recovery, and was discharged from the hospital with her finger completely healed and restored almost exactly to its normal shape, but quite incapable of flexion.

Case II.—M. C., aged twenty-two, was admitted in November last to the Mater Misericordiæ Hospital, suffering from advanced phthisis. She received at lengthy intervals a few injections, which produced no very marked reaction, and as her condition was very weak, the treatment was discontinued, and she lingered on till Feb. 27th, 1891, when she died. I performed an autopsy as usual, and extract the following from the notes made at the time:—

Left lung, fixed to the thoracic parietes by numerous and tough adhesions, the inferior margin of the lower lobe only being free. Size, normal; consistency greatly increased; the lung felt hard and heavy, its shape was rounded owing to large collapsed cavity at apex. On section this cavity was found to be as large as a duck's egg. Numerous smaller

ones communicated with it. Contents, muco-purulent. Elsewhere the cut surface consisted chiefly of the orifices of enormously dilated thick-walled bronchi, with intervening slate-coloured fibroid patches and caseating areas. Around the base was a small portion of air containing lung tissue, the upper margin of which was studded with small circular patches of tubercular peri-bronchitis, gradually becoming closer together till the completely consolidated portion of lung was arrived at.

Right lung.—Similar to left in appearance and with regard to the pleurisy. But a much larger portion was free from tubercle, not more than half the lowest lobe being affected.

The *kidneys* were in a state of fatty degeneration, and in the left was a small infarct. The intestines presented numerous small tubercular ulcers. Vermiform appendix very long and large, with a sort of cyst the size of a pea at its apex, and studded within with tubercular ulcers. The large intestine also contained numerous and large ulcers. On the peritoneal aspect the tubercles could be distinctly traced. The mesenteric glands were enlarged to the size of peas, and were partly caseated.

I have placed under the microscope two sections of the lung. One under a low power shows the peri-bronchitis and bronchitis, which, though tubercular in origin, here shows no well-formed tubercles, but only diffuse small cell infiltration with numerous giant cells.

The epithelium of the bronchi has mostly degenerated, and there is diffuse small cell infiltration of the submucous tissue, distinct hyperæmia evidenced by the dilated vessels (the corpuscular contents are stained bright red with eosin), the fibroid portion is hypertrophied, and the mucous glands are in a state of diffuse small cell infiltration. The neighbouring alveoli are completely choked up with catarrhal material and for the most part metamorphosed into a dense pigmented fibroid tissue.

The other section cut from the same block, but magnified 1,000 diameters, shows the bacilli diffused in greater or less abundance through the mucous and submucous coat of the bronchi, and particularly in the most superficial caseous layer which has replaced the degenerated epithelium. They do not seem to be within the cells or in the depths of the fibrotic lung tissue.

Art. XXII.—*Syphilitic Arteritis.* By Dr. Paul Le Roux. Translated by Charles Greene Cumston, Student Associate of the Royal Academy of Medicine in Ireland; Assistant at the Butini Hospital, Geneva, Switzerland.

Arteritis is one of the tertiary manifestations of a syphilitic diathesis, producing the same lesions in the brain as in other organs—such as the spleen, liver, kidneys, lungs, or testicles. No matter in what part of the human frame it may be observed, it is

characterised by a cellular hyperplasia, liable to terminate later on in either sclerosis or gumma. Cerebral arteritis at first sight appears to be rare, but if one takes into consideration the cases of syphilis which are met with in hospital practice, it shows itself quite frequently, but the fact that the diagnosis is difficult accounts for the small number of cases on record; often it is only by a *post-mortem* examination that its existence is revealed. Syphilitic arteritis is curable in the first stage, when the lesion is forming, and the already diseased arteries are not completely invaded by the newly-formed tissue. For this reason it is most important to recognise the affection in the early stage, and upon this we have tried to throw light in this article.

In spite of the variety of the manifestations of cerebral syphilis, which is a protean affection, I will divide the symptoms into two classes—1st, symptoms which appear from the commencement, when the artery attacked is simply narrowed in calibre and the blood has some difficulty in flowing through the vessel; 2nd, the other symptoms appearing a little later on, when the artery is completely obliterated, and the blood is thus cut off from the vessel, and cannot carry life to that part of the brain for which it was intended. One of the first symptoms which attract the patient's attention is a persistent cephalalgia—becoming more intense in the evening—occupying the frontal region, rarely the occipital, and never the temporal. This cephalalgia renders all movements painful—walking is difficult, and soon becomes impossible. The vision diminishes, the intelligence is dulled, and the patient becomes depressed, gloomy, and apathetic; during sleep he is haunted by nightmare. Sometimes the patient is exhausted, and this exhaustion can go as far as syncope, loss of consciousness more or less prolonged; nausea, rarely with vomiting; slow pulse, sometimes to a very marked degree. Then the patient may be taken with vertigo while in the street, and he reels like a drunkard. He may forget his name or certain words, and is aware of this fact (verbal amnesia); the diminishing intelligence obliges him to give up work. Certain persons experience these symptoms only when they are exposed to certain influences, such as cold, &c. For example, take a doctor in possession of all his intellectual faculties, who at certain intervals—especially when he has been exposed to cold—experiences giddiness and paralytic phenomena after presenting some fifteen years past the symptoms of cerebral compression. This patient, cured by iodide of potassium, owes, without

doubt, these transient cerebral symptoms to a difficulty in the cerebral circulation, caused by an endarteritis more or less pronounced, according to the influencing exterior conditions. After these symptoms, pointing to a difficulty of circulation in the brain, appear paralytic phenomena. For example, a patient, after some discomfort—such as a slight loss of appetite, lessening of hearing or of sight—goes to bed as usual; the next day he continues to sleep, his eyes are closed, and the respiration is stertorous. The limbs are relaxed without paralysis; the sensibility to a prick or a pinch is preserved. Often a certain time goes by—relatively quite long—before the symptoms become serious and of a marked intensity; the paralysis is often limited to certain parts of the limbs, confined to one of them, or to one side of the face, for example. Rarely does the hemiplegia appear suddenly, and if so it is more likely caused by a tumour of the brain pressing on the artery, and thus producing obliteration. More frequently it attacks the patient slowly; he feels the attack coming on, and follows its progression—which is sometimes steady, at other times irregular.

As syphilis attacks in preference the base of the brain, it is not difficult to foresee that the oculo-motor nerve, and in general all the nerves of the eye emerging from the inferior aspect of the brain, the facial, &c., are frequently attacked. The hemiplegia of the face, a symptom quite important to note, is more often crossed than direct. The uvula is deviated, which shows that the nerve is attacked before it emerges from the aqueduct of Fallopius. The troubles in the intelligence can go as far as insanity, and the case cited in Rabot's thesis (Paris, 1875) is a good proof of this.

General paralysis of syphilitic origin is difficult to distinguish, nevertheless a characteristic symptom of the affection—"le délire des grandeurs"—is often wanting in this case. Sometimes at the same time with the different symptoms already enumerated, and coinciding with the hemiplegia, the coma may be accompanied by convulsions, or epileptoid attacks. At other times these attacks come on at the same time as the resolution of the limbs and the coma. These symptoms are generally of grave prognosis, and often indicate a final evolution of the disease. The symptoms caused by an arteritis are liable to disappear, so a hemiplegia can improve, or even get completely well; but once the lesion formed, and the artery completely obliterated, all efforts to cure are nearly useless. It is a common lesion which cannot be mastered—the territory, no longer nourished by the artery, cannot live, and is destined to die.

It is the necrobiosis of the tissue with complications which are dependent on it—encephalitis, meningitis, &c. The prognosis, as is seen, is always rather bad, and this affection demands the greatest attention on the part of the medical man; on the diagnosis often depends the safety of the patient, for a well-directed treatment can alone arrest, better, or cure this grave affection if taken in hand in time.

Can the lesions of the arteries be mistaken for other diseases? Can syphilitic arteritis be confounded with atheroma, tuberculosis, &c.? An attentive examination will show us that an arterio-sclerosis is never localised in one artery—the entire vascular system is invaded. The arteries are hard, resisting, resembling cords; they are, as Professor Peter says, "the rust of life," and are more often present in old age. Thus, as Professor Fournier says:—"Every hemiplegia appearing in a subject under forty years of age, who is not affected by alcoholism or a lesion of the heart, is at least eight times out of ten, perhaps even nine out of ten, of syphilitic origin." It is the same for epilepsy and ocular paralysis; it is evident that among this number we do not include patients with hereditary syphilis.

Tuberculosis resembles syphilis in certain ways, but it only rarely attacks small arteries, and especially the cerebral arteries; it attacks other parts, invading rather the sheath of the vessel and the connective tissue in which it is found embedded, agglomerated, and forming a mass circumscribing the calibre of the artery. Age also pleads in favour of syphilitic lesions; cerebral tuberculosis (meningitis, or other accidents) is nearly always the appanage of infancy. On the other hand, the treatment has a supreme action, and if we should recall to mind the old saying, "*Naturam morborum curationes ostendunt*," we cannot help inclining towards the idea that these lesions on which iodide of potassium has so much influence are of syphilitic origin. Unfortunately, tuberculosis and atheroma still await their specific remedies, and therapeutics, in spite of all efforts, has hardly any power over these two terrible diseases. A symptom of arteritis, to which hardly any attention has been called, and which was in the first instance studied by Professor Vulpian, may have a certain diagnostic importance, and present a certain interest from the physiological point of view—this is cyanosis. The three cases on which this article is based are curious in many respects.

The first is that of a cook, aged twenty-eight, who came into the

Hôtel Dieu with a slight typhoid fever, with some spots of purpura on the inferior internal part of the right leg, over the tibio-tarsal articulation, with sharp pains in this region. Convalescence at the end of two weeks; internal pains were felt at the union of the superior one-third with the inferior two-thirds of the anterior internal face of the thigh, radiating along the course of the femoral. No fever; normal heart; no cord of lymphatics along the course of the vessel; palpation extremely painful; both dorsales pedis arteries are felt with difficulty; the left posterior tibial artery beats much more strongly than the right; at the same place, behind the malleolus, it is nearly imperceptible. When the patient got up, the skin of the leg and foot was cyanosed, and sweat appeared on the foot. Sometime after the progress of the disease became more encouraging, the pains disappeared little by little, cyanosis persisted for some time, the pulsations came back little by little, and seven weeks later the patient was discharged.

M. Barié (1)[a] has also published some cases, and more recently Dr. Brunon (2)—at that time Professor Vulpian's *interne*—adds two cases, in which the symptom of cyanosis was very pronounced. Professor Vulpian admits that this modification in the circulation of the foot and leg may be explained by a diminution of the afflux of blood in the capillaries. Cutaneous cyanosis and dilatation of the veins are not present while the patient is in bed; the flow of blood in the arteries is not interrupted, but simply lessened. In the horizontal position the venous blood is pushed towards the thigh by a sufficient pressure, but in the upright position cyanosis becomes marked, the veins swell because the pressure transmitted by the arteries to the veins, *viâ* the capillaries, is no longer strong enough to overcome the obstacle opposed by the weight, and it consequently results in a relative stagnation of blood in the veins and capillaries. The feebleness of the pulse of the posterior tibial artery of the diseased limb confirmed the idea that the flow of blood was less free than in the healthy one, and it is easily understood how much the symptom of cyanosis merits one's attention, and also how important it may be in throwing light upon a diagnosis, when one has the good fortune to find it present. This sign, indicated by Vulpian, Barié, and Brunon, should be looked for in that cerebral arteritis which now occupies us; in fact, in the case where cyanosis of one side of the face or neck is remarked, this symptom should be a great assistance to the physician in the

[a] The numerals refer to the Bibliography at the end of this paper.

diagnosis. But this is, after all, a pathologico-physiological point of view, which is interesting, but useless to investigate, excepting the cyanosis—at least, in analogous phenomena derived from circulatory derangements, as indicated by Vulpian and Brunon. I found nothing in my patients, but nevertheless it appeared to me interesting to make an analysis of those facts, and to draw attention to them.

The origin of every syphilitic new-formation, as Professor Fournier has so clearly shown in his clinical lectures, is a cellular hyperplasia—that is to say, a local proliferation of cells more or less abundant—in a certain point of the economy. Diffused in the midst of an amorphous investing membrane, these elements infiltrate the parenchyma of the affected organ in various degrees, and by multiplication, finish by forming a nodose tumour, which was called a "node" in by-gone years, and to-day is called circumscribed or diffuse infiltration.

En résumé, in the first period of tertiary phenomena, hyperplastic deposits are found, interstitial formations in the interior of the affected organ. Later on this hyperplasia undergoes, as I have already said, one or the other mode of evolution which I will now briefly describe.

1. The cell elements may be full of life and remain endowed with vitality. In this case they multiply, are much proliferated, and form an organic mass containing in its meshes the normal tissues, in the middle of which this new formation had developed. This mass becomes condensed—at first cellular, it changes to cellulo-fibroid, fibroid, and at length fibrous. Little by little it retracts like all nodular productions, the normal elements of the organ are then found imprisoned and compressed, smothered up, as it were, by this proliferated and contractile mass, so that they atrophy, degenerate, and progressively disappear partly or totally. This new tissue takes the place of the fundamental tissue, and sclerosis is formed.

2. The cell elements, endowed without doubt with a less degree of vitality, are hastily disorganised when formed with difficulty; they are, so to speak, born dead. Almost as soon as the cells are united they tend to destroy one another, passing through a series of transformations of segmentation known as granulo-fatty degeneration. In short, these elements die *in situ*, and soon they only form in the heart of the living tissue a kind of detritus, having the aspect of a yellowish, caseous mass, tuberculiform, known as "gumma." Among the principal points attacked by cerebral syphilis the following

should be signalised:—The Sylvian arteries and the basilar trunk, sometimes also the small terminal intracranial arteries. The lesions are generally limited to a very small extent, sometimes in two symmetrical points. A dilatation of an artery may be found, but oftener there exists a contraction following the formation of a kind of cicatricial tissue. The calibre of the artery is lessened by proliferation of young cells in the vascular parts of the coats of the vessels. This infiltration ordinarily follows the processes of sclerosis; the cells infiltrating the coats of the vessels form rigid meshes which, little by little, retract as in all nodular tissue, consequently causing reduction in the calibre of the artery. The processes may predominate, either in the external coats or in the internal coats, but whether there is periarteritis or endoarteritis the result is the same, and this distinction to-day has not the importance that certain authors attached to it, for often the two lesions exist together, and the vessel is so compressed that the lesions of the external coats are not long in acting upon the circulation in the same manner as the internal diseased coats. The artery being narrowed and diminished in calibre, the blood flows through it with difficulty, and it even finishes in obliteration; a fibrous mass then forms, in the same way as in ligature of the vessel. So in these cases, one finds at the autopsy—as in the case which will be described further on—the artery hard, resistent, containing a clot of blood, adherent and evidently formed on the spot, with a blackish fusiform prolongation of new formation. The artery may be, 1st, thickened in a variable extent, sometimes only in a portion of its circumference, at other times in the entire circumference—the artery is rigid and hard; 2nd, sometimes it only contains spots, patches which project on the internal or external surfaces of the artery; 3rd, exceptionally nodosities are to be found resembling grains of rice; 4th and last degree, the artery may be constricted, or even completely obliterated.

Among the authors who have reported cases of syphilitic arteritis I may cite Dittrich, Hayach, Virchow, Meyer, who found the cerebral carotid arteries obliterated in patients having visceral syphilis (3). One of these cases approaches one of my own to be related further on. The patient had had vertigo, persistent headaches, some epileptoid attacks, feebleness of the left side of the body, movements on this side being very weak; right less distinct; speech difficult and confused; at last coma came on, followed by death. At the autopsy the dura mater was found thickened,

adhering by means of fibroid tissue to the cerebral substance; the right carotid artery and its branches were obliterated by fibrous cords adhering to the walls of the vessels. The liver was full of cicatrices, containing several small tumours. Another case cited in Lancereaux's work (4) is most interesting, for it treats of a young man manifestly syphilitic, and the affected artery was examined microscopically. A young man, aged twenty-five, under treatment for five months for a syphilitic affection which could not be cured, succumbed rapidly after presenting symptoms of an encephalitis. The autopsy showed, besides some tumours of small size, the existence of a localised encephalitis, with a partial obliteration of both internal carotid arteries at their terminations. Both the affected arteries contained a new formation, rendering them thicker and notably narrowing their calibre.

It is evident in this case that it was not an atheromatous lesion but a circumscribed lesion formed of cells and spherical nuclei. Sternberg, Wells, and Weber found the same alterations in different arteries—cerebral, pulmonary, the aorta, &c.; these lesions, limited to one spot, are characteristic of the tertiary period of syphilis, whether the thickening of the coats be external or internal. A case in Prof. Trélat's service at the Salpêtrière (5) was that of a woman having lypemania, and who died soon after entering the hospital. The autopsy showed: The basilar trunk had a whitish colour, with thickened walls; on section it is found not to be an atheromatous artery, for the vessel is supple, elastic, the external coat being the only one thickened. The Sylvian artery presented nodosities the size of a bean, white, and irregular. On a great many of the small branches fusiform nodosities were found, measuring from 3 millimetres to 1 centimetre, being still larger in the arteries destined for the cerebral substance. The arteries were very narrow, and even obliterated, adhering by their external surface to the neighbouring cerebral substance, particles of which were found adhering to the artery when this organ was torn off. The microscopical examination revealed an acute arteritis, with thickening of the internal coat, and a very active proliferation of the connective tissue elements in the middle coat. The basilar trunk also presented a considerable thickening of its internal coat. This nerve-tissue was composed of fusiform or branching cells in the midst of an intermediate, finely-fibrous substance; the elastic coat was intact, the muscular coat was infiltrated by round embryonic cells and furrowed by capillaries gorged with blood: the external

coat was infiltrated with round cells grouped in linear masses along the perivascular lymph spaces, and sometimes forming considerable globular masses. The vasavasorum were dilated and filled with blood. Several were also surrounded by embryonic cells, recalling to mind the vessels which are seen in erysipelas. The calibre of the basilar trunk was diminished by sanguineous thrombi. The nodosities of the small arteries were anatomically made up of similar alterations; it was also remarked that the canal of the artery was obliterated by a proliferation of the internal coat. Lately Lancereaux, Marotte, and Jackson have published cases of obliteration of the left internal carotid artery. No one is unaware that Prof. Lutzgarten, of Vienna, believes he has discovered in the microscopical sections of chancre the specific bacillus of the disease. According to this gentleman, this bacillus is always found included in the migratory cells which are endowed with locomotion, met with oftener on the border than in the midst of the infiltration; it loses its colour by the action of acids, while alcohol has no action whatever on it. Doutrelepont, of Bonn, and Schultz found them in the syphilitic products; this bacillus does not abound, but it may be cultivated, and its inoculation, which has been attempted several times, gave no positive result, so that one is reduced to recognise them by their form, their manner of implantation in the tissues, and the special proceedings for colouring them. The experiments of Alvarez and Favel, made under the direction of Prof. Cornil, have very much shaken the view as to the problematic specificity of this bacillus; they found the same bacillus in the normal secretions of the external genital organs and in the smegma præputiale; on the other hand, they did not find it in the microscopical sections of the tissue of indurated chancres, but only in the secretions of mucus patches, ulcerated patches, ulcerated syphilides, and different secretions of the external genital organs; whether these secretions are obtained from a syphilitic or a healthy person this bacillus existed in the same manner. For the time being it appears to me difficult to admit the specificity of Lutzgarten's bacillus, and I shall wait for new experiments. The treatment is simple: iodide of potassium and mercury in quite large doses alone can root out the manifestations of the diathesis, sustaining at the same time the strength of the patient. I shall nevertheless enter into some details. When should this treatment be commenced? In the first place, this treatment should be commenced as soon as possible, for cerebral syphilis in the commencement gives in quite easily, not, how-

ever, always, to antisyphilitic treatment; the longer one waits the more rebellious it becomes, and if it arrives at this period of disorganisation of which I have already spoken, it is in vain that we act vigorously against it, for it is too late. So, *en résumé*, cerebral syphilis should be treated the moment that the diagnosis has been made, as soon as the persistent nocturnal headache or the different troubles of the intelligence are present. Secondly, the treatment should be prescribed in a most energetic way; if only an anodyne treatment is applied the patient but rarely recovers, and as Prof. Fournis says, "to do little or less than the necessary measures is to do about nothing at all;" it is necessary to employ, according to the same gentleman, "le traitement d'assaut," combining mercury and iodide of potassium, the two great antisyphilitic remedies. The iodide should be given the greater part of the time by the mouth; very exceptionally, in cases of complete intolerance, by the rectum; it should be given in doses of 3 grammes a day in the beginning, which dose will be progressively increased to 4, 5, 6, and even 8 grammes in the 24 hours. It is rarely necessary to give over 8 grammes, and if given in larger doses, intolerance, gastro-intestinal troubles, and supersaturation will rapidly be produced. In order to make the iodide acceptable to the patient, it may be mixed with wine, water, beer, or soup, and taken in several doses at the commencement and middle of the meal. Mercury may be administered by the mouth in the form of mercurous iodide or sublimate. The green iodide, in doses of 10 to 20 centigrammes, the bichloride from 2 to 5 centigrammes, calomel in fractional doses during four days as follows:—

1st day	-	-	-	25 centigrammes
2nd day	-	-	-	50 ,,
3rd day	-	-	-	75 ,,
4th day	-	-	-	1 gramme.

Each day the dose should be given in ten parts. This method of treatment has given good results in the hands of Dr. Hillairet, who is its author, but it demands an active watchfulness, and the medicine must be stopped after this stage for a week, and then recommenced. Frictions of mercury have given me good results, for they do not tire the stomach, and at the most produce only a little erythema, stomatitis, and slight salivation—accidents which are in no way dangerous, and which may be done away with by administering chlorate of potassium or alum in the form of gargle or potion. To prevent the organism becoming habituated—which in

a long treatment destroys the good effects of a medicament—it is very useful to alternate the mercurial frictions with iodide of potassium, giving each remedy alternately for three weeks at a time. The treatment should be continued until the symptoms have completely disappeared, and even after, for later on the diathesis can become active again; so the patient should be advised to follow a special course of hygiene and an appropriate treatment—that is to say, several periods of mercurial treatment as well as to take the iodide for some years. Purgatives and cutaneous revulsives have also their indications, and lastly, outside of the treatment of the specific affection the general condition of the patient necessitates a careful attention. The strength must be kept up by a tonic regimen—iron, quinine, bitters, cod-liver oil, the sulphurous thermal mineral waters of Uriage (Isère), Bagnères-de-Luchon, &c., in France.[a]

Case I.—Pauline G., aged twenty-four, dress-maker; entered the Hôtel Dieu of Rouen, May 23rd, 1888. At the commencement of the same year the patient had been treated during a month in the hospital. At that time she had very frequently vertigo and giddiness. The following facts were obtained from the patient:—Had been healthy up to the age of twenty, when she had a severe attack of enteritis, which profoundly altered her health; since then she had been subject to vertigo and giddiness. Sight is lessened, and at certain moments she can distinguish nothing; all appears foggy. At different times she has had pains in the articulations, but they did not oblige the patient to remain in bed or to give up work. No cough; nothing abnormal in the thorax. Quite frequent palpitations of the heart, with a sentiment of oppression and smothering, especially on the least effort. Appetite capricious; between meals the patient experiences faintness and twitching of the stomach; no vomiting. Menstruated at sixteen years; at the time of their appearance the menses always caused a certain malaise. They were difficult, and not at all abundant; very frequent leucorrhœa. In May, 1887, she suffered greatly on account of a delay in their appearance, and had an incomplete paralysis of the left side. This phenomenon persisted for some days (about eight), then diminished, so that a month later all was ended. No trace of syphilis; the patient denied having had any accident, so that the diagnosis remained very undecided. On her returning on April 10th she informed me that her menses had not returned, and that she was taken with the same symptoms as in the preceding year. Some days ago she lost consciousness, and on coming to she was paralysed on the left side; incomplete hemiplegia. Her strength has since slightly

[a] Schinznach, in Switzerland, can also be recommended as excellent in syphilitic affections.—Translator's Note.

returned, but the patient still feels, especially on the right side, a sharp persistent pain.

April 11th.—Patient feels feeble on the right side; she still can move the right arm and leg a little. When she laughs, whistles, or speaks, the mouth is strongly deviated to the left; the cheeks are flabby, eyes are equally opened, but she cannot look straight forward; tongue is deviated, the sensibility slightly altered, especially on the paralysed side; the face is pale, and has a fatigued expression. On auscultation of the thorax nothing abnormal was found; hissing is heard at the base of the heart; bruit of anæmia, slight hyperæsthesia of the ovaries; sensation of lump in the throat. Treatment consisted in sulphur baths and tonics. The phenomena progressively subside; the patient began to get up and take a few steps, dragging the leg after her; the step is tottering, and the patient holds on to the beds in order to walk. The hand is still weak, and the arm heavy; mouth deviated to the left; sight is better, although often hazy. In spite of the advice given her to remain, the patient left the hospital improved, but dragging her leg. She could not return to her work.

Second Sojourn—May 23rd.—Patient was found in the street struggling as in an attack of epilepsy, and is brought to the Hôtel Dieu. When in the ward the patient had another attack; revulsives were applied to the legs and chest, and cold water was thrown on her, and the attack abated. A little later another attack came on; slight clonic movements, the head is turned from side to side on the pillow; pulsation of the eyelids; the arms are agitated by jerking movements; the hands are clenched with the thumb inside. In forced adduction the fingers were slightly flexed, the face pale; sensibility slightly marked; frequent respiration. Several attacks succeed one another. Coma continued, and at the evening visit the patient is still in the same condition. A purgative injection was given; mustard plasters applied to the thighs, legs, and thorax. The patient was agitated, and appeared to feel; she gave a few little inarticulate cries, opened her eyes and shut them immediately.

May 24th.—Coma still exists; the members are in complete resolution, and the right arm when lifted falls more relaxed than the left arm; the leg as well falls. Irritation of the skin by pricking or pinching hardly produces any movements; there are a few contractions of the face. The head is turned to the right and the eyes as well—they look towards the affected side. The gaze is fixed; no strabismus; the pupils appear dilated, but not irregular. The labial commissure is drawn to the left; the patient has not urinated or had a stool since she was brought to the hospital. No vomiting, so the diagnosis of meningitis is discarded. Respiration slow; heart-beats are about normal. The injection not having produced an effect, 50 centigrammes of calomel are given in one dose, but also without effect. A purgative injection is given, which

produced a slight stool; the urine was withdrawn by a sound, and contained neither albumen nor sugar.

May 25th.—In the evening had an epileptoid attack. If her head is raised up the patient gives some little cries; the neck is stiff, the left arm is slightly contracted. The eye follows the persons who pass by the bed.

May 26th.—Ecchymosis on the left leg, caused by her fall; on the internal part of the left foot, and on the dorsum of the right, are found two excoriations, measuring about 3 centimetres each. The patient urinates and defecates in bed; no consciousness. The questions addressed do not wake the patient from her somnolency; the eye no longer follows the finger. Pricking and pinching produce no movement of the arms, but in the right leg slight movement can be produced; entire inertia on the left side. During the day the patient complains a great deal, and gives little cries. In the afternoon she can no longer swallow; dysphagia exists.

May 27th.—Same condition; complete resolution; face pale; the saliva runs from the right commissure of the mouth; the head still turned to the right, towards the affected side. Eye fixed, with nystagmus; oscillation and trembling. Pupils equal, and not dilated; left foot turned in; noisy, stertorous respiration. Pain causes a grimace on the right side of the face; the left remains immovable.

May 28th.—Same condition; coma more profound; stertorous respiration, with interruptions (Cheyne-Stokes' respiration.) Pulse frequent, feeble, irregular; 40 respirations per minute. Temperature, 39·5° C.; incontinence of urine and fæcal matter. Died at half-past three in the afternoon.

Autopsy eighteen hours after Death.—Lungs healthy; a few adhesions of the left lung. Heart flabby, slightly fatty; nothing of note in the large vessels or aorta. Liver slightly fatty; spleen normal. The right kidney presents, on examination, a furrow on the posterior surface, dividing the organ into two parts. This sulcus, in the form of a cicatrix, is about one centimetre in width, broader on the anterior surface, in such a manner that it is situated about midway between the extremities of the kidney. In the middle of this sulcus a whitish lump, surrounded by a reddish areola, is found. This surface also presents other little irregular projections, and a multitude of small white nuclei, the size of a pin's head, on the upper part of the cicatrix. The left kidney presents more advanced and more generalised lesions; it is atrophied, and in certain parts the cortical substance, has completely disappeared. These lesions, and in particular the small tumours as well as the cicatrix in the form of a furrow, seemed to be due to syphilis. The corpus callosum has a small yellowish nucleus the size of a pea on the left side. On the right side are found several softened spots in the centrum ovale minus, especially in its middle third;

a more considerable spot of softening is remarked in the left side of the corpora striata. There is a very extended softening, reaching to nearly the internal capsule; this nucleus enters deeply and nearly reaches the insula. On section a yellowish liquid flows out. The same lesions, only more advanced, are found in the occipital lobe. The left Sylvian artery is narrower than the right one, and at first sight offers a whitish aspect. On incising the artery at this point a yellowish-white, hard, adherent clot is discovered, on each side of which is a blackish stratified clot extending into the various branches of the Sylvian artery. It is to this organised clot, evidently formed on the spot, that the cause of softening is due. The uterus is voluminous, presenting a notable thickening towards the fundus, and containing a fœtus of three and a half months, dead for some time, for it was macerated, and the epidermis was detached in several places.

Case II.—D., aged fifty; entered Hôtel Dieu Jan. 12, 1889; married; has had eight children, the last child born dead in 1870, the others were born living, but died young, at about the age of nine months. Her husband is well, but is subject to obstinate sore throats, and the patient herself is also subject to the same affection; persistent headache in the frontal region. Jan. 7, while at work at the theatre, where she is dresser, she had become dazed, and would have fallen had she not leaned against the wall. When this passed away she noticed that her left leg and arm were very weak; she dragged her leg after her, and in the beginning she could not sit down without falling to the left. The sight was troubled, and she could not distinguish objects before her. Returning to her home in a carriage, she there remained until Jan. 12. Seeing that she became no better, she entered the hospital. What draws attention at first sight is her way of speaking. Speech is slow, jerking, as in subjects having medullary sclerosis; the right eyelid is drooped; the eye projects (divergent strabismus very pronounced; patient sees an object placed at her side without turning her head; no diplopia; divergence of rays is destroyed). Left eye is intact; when the patient stretches out her hands a slight trembling is observed; the more she does so, the greater the nutation. The patient denies any excess in alcohol, and said that she had trembled for the last five or six years. Liver and spleen present no alteration; lungs and heart give no pathological sign; no atheroma of the arteries. A saline purgative was given on the morning of her entering—two grammes of iodide of potassium.

Jan. 15.—Patient complains of excessively violent pains in the frontal region, and in the neck and legs, especially in the right; nevertheless, no traces of the diathesis are to be found on the body. Examination of the urine shows absence of sugar and albumen. The right eye causes great distress to the patient; in order to distinguish objects she is obliged to

shut the right eye; without this precaution she has vertigo. The images formed in the eye are slightly inclined, and the foot of the bed in front of her appears to her inclined downwards, and to the left; looking with both eyes the image of the right eye is situated at the left of the one seen by the left eye; pupil is dilated; the ophthalmic ganglia (motor root) is paralysed, the pupil no longer contracting when exposed to strong light. The troubles of the right diplopia, &c., are all due to paralysis of the ocular motor nerve; thus the upper eyelid is lowered, and the patient cannot completely open her eye. Slight anæsthesia on the right and on all the left side of the face.

Jan 21.—Pain in the cervical region; no notable improvement; ophthalmoscopic examination reveals no appreciable lesion.

Jan. 28.—Pain in the cervical region has disappeared.

Feb. 4.—Patient leaves upon request, although imperfectly cured; the eye is more opened and the sight less troubled. The patient was seen by myself at her home; was in the same condition; the eye was only half opened, and the patient cannot direct herself alone; the nutation and trembling are still very accentuated. Since leaving the hospital the patient has not improved—rather the contrary; without doubt, because she took little pains to follow the treatment prescribed.

Case III.—D., dressmaker, aged twenty-three, entered hospital Jan. 7, 1889. Nothing to note in her antecedents. Her mother died asthmatic, her father died shortly after her birth, and she cannot give any information as to her disease. Brought up on the nursing-bottle at home, she has always suffered. Two years ago she had a disease of the intestines, but since has been quite well. In June, 1888, she noticed pimples on the genital organs and legs, which disappeared, leaving yellowish, copper-coloured spots, to-day still perfectly visible. At the same time the patient said that she experienced a persistent sore throat, and on attentive examination of the mucous membrane of the lips, small white patches may be observed resembling mucous patches. Examination of the eyes reveals an inequality of the pupils. The pupils were irregular, and towards the month of July she was obliged to consult a doctor, who gave her a collyrium, the name of which she has forgotten, and a mixture of iodide of potassium. Some days after her entrance at the Hôtel Dieu, a few drops of atropin were instilled into the eyes, and by the ophthalmoscope white streaks are found extending from the iris to the anterior surface of the crystalline; consequently a syphilitic iritis. On the evening of Jan. 5th the patient noticed that her right arm became heavier, and that she could not move it; the right leg also was weak and could not support the weight of the body, and was dragged in walking; the mouth was turned to the left. On entering the right arm and leg are nearly completely paralysed, the sensibility is unaltered, the speech is difficult, and the mouth is drawn to

the left. When the patient laughs or whistles this is more marked; the commissure is drawn to the left; the right side is immovable, otherwise normal. On the neck small white spots are found scattered over a brown-coloured surface, which are the traces of a pigmentary syphilide.

Jan. 20.—Appetite is good, the digestive functions are unaltered; the patient eats two meals, and an antisyphilitic treatment was given: iodide of potassium and 2 of Sédillot's pills.[a] To avoid stomatitis an alum gargle was ordered.

Feb. 2.—The arm is better; notable improvement under the influence of the iodide.

Feb. 6.—The patient commenced to walk, although the leg was dragged after her; the arm still weak. Quinine wine; every other day a sulphur bath. The following days her condition improved, the leg is dragged less and less, and the arm commenced to be useful, although weaker than the healthy one.

March 6.—The patient asks leave to go, although imperfectly cured. She returned some time after for the same symptoms, but this time they are less severe, and the patient left after a short sojourn, imperfectly cured it is true.

Case IV.—C. L., aged forty-three, labourer, admitted Feb. 17, 1889. No anterior disease, excepting a chancre in 1875, for which he was treated at this hospital (Hôtel Dieu). At thirty-five he had a nasal polypus, obliging an operation. Since then he has had frequent and prolonged headaches, especially in the frontal region. His hair fell out, but he pretends that this is hereditary in his family. In his youth he had an abscess in the external angle of the orbit; this was incised, and the cicatrix prevents him from completely opening the lids of the right eye.

Feb. 12, that is to say, five days before entering the hospital, he perceived that his right leg was weak, likewise the arm of the same side, which he employed with difficulty; his leg dragged, and the arm felt heavy. On admission the right side was found paralysed nearly completely; the left upper eyelid drooped, closing the eye; the globe was slightly turned towards the external angle; the pupil of the right eye was more dilated than the left; binocular vision was impossible; diplopia existed; speech was difficult and hesitating, the patient speaking with right half of the mouth, the left being quite immovable; the uvula was deviated to the left; the soft palate appeared relaxed. For two days the patient has not been able to take food; when he does, either solid or

[a] Sédillot's pills are thus prescribed:—

℞. Mercurial pomatum, 3 grammes.
Medicated soap, 2 grammes.
Powdered liquorice, 1 gramme.

M., and make 60 pills. —*Translator's Note.*

liquid, he is taken with a violent cough, oppression, respiration ceases, and the liquid or food, in greater part, returns by the nose. Sensibility is everywhere preserved. On the lower part of the thorax and abdomen were brownish-yellow spots of pityriasis versicolor, which disappear, so the patient said, after one sulphur bath. In the left groin a cicatrix of a bubo was found, which is retracted, white, and puckered.

Feb. 12.—As the patient could swallow nothing, alimentation by means of an œsophagus sound was tried, but the patient could not stand this, as attacks of suffocation followed, so it was abandoned. When the patient is asked to walk, he is obliged to be supported to keep from falling, the vertical posture is impossible. No muscular weakness; the patient squeezes with the same force with the right as with the left hand. Nothing abnormal in the heart or thorax; urine normal. Treatment consists in mercurial frictions and a purgative injection.

Feb. 20.—The patient has been able to drink a little and to take nourishment by a pipette. The eye opens a little, and the paralysis of the ocular motor nerve is improving. Blister applied to the neck, mercurial frictions in the armpits and groins.

Feb. 23.—The patient continues to drink, employing a pipette, and takes some thin soup.

Feb. 27.—Notable improvement. Two of Sédillot's pills, 2 grammes of iodide of potassium in a mixture. Gargle, with 4 grammes of chlorate of potassium.

March 1.—Same condition.

March 10.—Improvement continues; the eyelid can be raised quite easily; speech is now free and clear. The patient takes food naturally. No more dysphagia. Diplopia still exists, but the patient avoids this inconvenience by closing one of the eyes.

March 20.—Patient walks well, and his agility has returned; the diplopia only persists. The patient uses spectacles, with a piece of paper stuck over one of the glasses, so that by this means he can work and read without getting tired.

April 5.—The patient asks to leave. Speech is free; the mouth still is slightly deviated, and diplopia persists. This patient I saw not long ago (four or five months after leaving the hospital); he has taken up his work without suffering. However, in the evening he cannot distinguish objects, and sometimes he has vertigo when he looks too long at the same thing. He always wears his spectacles. Unfortunately he has neglected a little the treatment that he was advised to continue.

WORKS CITED.

[The numbers correspond to those in the text.]

(1) "Revue de Médecine," 1881.

(2) "Archives Gén. de méd," 1884.

(3) Rabot. "Paris Thesis," 1875.

(4) "Traité de la Syphilis."

(5) Rabot. Loc. cit.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Natural History and Relations of Pneumonia: its Causes, Forms, and Treatment. A Clinical Study. By OCTAVIUS STURGES, M.D., Cantab., F.R.C.P., Physician to the Westminster Hospital and the Hospital for Sick Children, Great Ormond-street; and SIDNEY COUPLAND, M.D., Lond., F.R.C.P., Physician to the Middlesex Hospital. Second Edition. London: Smith, Elder, & Co. 1890, 8vo. Pp. 452.

THE first edition of this interesting work saw the light in 1876. It attracted the attention of physicians as a monograph of sterling merit on the fascinating subject of Pneumonia. In the preface to this, the second edition of their work, the authors point out how extensive the literature of the disease has become in recent years—particularly in regard to its ætiology, epidemic prevalence, infectiveness, and bacteriology. An index at the end of the volume contains the names of the chief historians of the disease called "pneumonia"—or as we would prefer to express it, that group of pulmonary diseases or inflammations included under the generic term "pneumonia." Pre-eminent among the long array of names stand those of Grisolle, Jürgensen, and Wilson Fox, as representative authorities on pneumonia in their respective countries—France, Germany, and Great Britain.

Drs. Sturges and Coupland particularly acknowledge their indebtedness to the labours of the Collective Investigation Committee on Pneumonia, appointed by the British Medical Association in 1884—a Committee which gathered together the facts relating to more than one thousand examples of the disease occurring in various parts of the United Kingdom.

The foregoing facts will show how comprehensive have been the researches of the authors; but the chief feature of the work before us remains to be mentioned and that is, its clinical character. For example, the ninth chapter, extending over 36 pages, includes abstracts of sixteen illustrative clinical records, while a number of

additional cases illustrating certain varieties and associations of the disease are incorporated in the text, and may be found by reference to the index. By-the-by, in this ninth chapter, the ugly misprint "sonero-ribilant" (for "sonoro-sibilant") occurs in the fourth line from the bottom of page 157.

The work is divided into four Parts, including twenty-one chapters. The first part is devoted to the clinical history and morbid anatomy of the disease; Part II. to its varieties and counterfeits; Part III. to its ætiology and pathology; and Part IV. to its treatment. The book concludes with the list of authorities already referred to, and a general index.

Chapter II., on the Forms of Pneumonia, opens with an allusion, couched in a politely sarcastic vein, to Sir William Aitkin's dogmatic definitions of diseases "after the manner of the exact sciences." At the same time, the authors' ideal pneumonia is defined as "that form of lung-inflammation which, whether fatal or not, is characterised by sudden onset, well-defined symptoms, distinct anatomical stages, and limited duration" (page 24).

We need not here delay to analyse the clear and for the most part excellent clinical description of pneumonia, defined as above, which is contained in chapters III. to VII. inclusive. But in Chapter VIII., on the "Elements of Prognosis," our attention is arrested by the statement that the authors' "own experience suffices to show that, while no distinction whatever can be made as between the left side and the right, *apex pneumonia is not so fatal as basic;* and further, that *it does not, as is often supposed, subject the patient to the risk of tubercular phthisis.*" Again, the extent of local inflammation is not more important as a factor in prognosis than is the degree of general constitutional disturbance. Far more liable prognostics than the more or less wide extent of lung implication are continued high fever, and an increasing rate and smallness of the pulse. This latter sign means that the heart, already embarrassed in its action by the disordered pulmonary circulation, is further weakened by the pyrexial state. A feeble, fluttering, or imperceptible cardiac impulse, a diminished shortened first sound, and a pulse-rate above 120 with irregularity or intermittence are ominous signs. A pulse-rate of 140 to 150 is of almost fatal import. It is to the heart, then, that we must chiefly look for indications of the probable outcome of the case, although it is quite true that the issue of pneumonia is very largely affected by the co-existence of disease in other organs—notably the kidneys.

Some statements made in connection with this question of the effect of complications on the prognosis of pneumonia we feel bound to criticise—such, for example, as the statement that "of the *acute specific diseases*, typhus is the most to be dreaded." Surely typhus, particularly at the present day, can scarcely ever occur as an intercurrent complication of acute pneumonia. On the other hand, it is pretty clearly established that true pneumonia is a very rare complication of typhus—the pulmonary hypostatic congestion of which has little in common with pneumonia beyond the extravasation of a fibrinous exudation into the air vesicles. The curious thing is that our authors admit all this in another part of their work—Chapter XI., on "Pneumonia associated with other Acute Diseases."

The other statement to which we take exception is that "erysipelas is occasionally complicated with pneumonia or may arise in its course." What we hold on this subject is that there is undoubtedly such a thing as erysipelas of the lung, and it is more rational to adopt this view than to write as Drs. Sturges and Coupland have done in the sentence quoted above. Many cases of *Pneumonia migrans* are, we think, nothing more or less than erysipelas of the lung. At the beginning of Chapter X. the authors refer to the clinical fact that "pneumonia will sometimes spread from its first place like erysipelas," and they shortly afterwards speak of "this so-called erysipelatous form of the disease." We would go further and omit the qualifying term "so-called," believing that the disease is really erysipelas. This opinion receives confirmation from the frequent occurrence of erysipelas in the same district with pneumonia. Thus, in one series of 350 cases of pneumonia brought under the observation of the Collective Investigation Committee, and quoted by Drs. Sturges and Coupland, erysipelas was prevalent at the time in 70; in a second series of like number, it was prevalent in 55, and in a third in 63 cases.

In discussing—in Chapter XVIII.—the question whether pneumonia is to be regarded as a specific disease or a mere local inflammation, the authors mention the fact that, more than two centuries ago, Huxham employed the term "Pneumonic Fever." Hoffmann did the same, and in our own day the name of Jürgensen is especially associated with this teaching. Dr. Austin Flint would place the disease among the essential fevers, and prefers the term "pneumonic fever" to that of "acute lobar pneumonia," while Dr. T. H. Green writes (Quain's "Dictionary of Medicine," Art.

"Inflammation of Lungs"):—"Acute pneumonia is undoubtedly to be regarded as a general disease, of which the pulmonary inflammation is the prominent local lesion." The authors sum up the whole argument from this point of view in these sentences (pages 372 and 373):—

"(1.) Pneumonia is a specific general disease, of which lobar inflammation of the lung is the local manifestation.

"(2.) The most constant cause of pneumonia is Fraenkel's diplococcus, but there are other viruses (*sic*) which may evoke it.

"(3.) Chill and other causes—some more, some less—distinctly observed in that relation, are to be regarded only as secondary or predisposing.

"(4.) The pneumonic virus may, and often does, excite inflammatory disturbance in other organs than the lung, and sometimes such inflammations may be excited without the lung participating.

"(5.) Exceptionally, pneumonia may be contagious."

The authors add—"Time will show whether or not these conclusions will be finally accepted."

Part IV., on "Treatment," is full of interest, especially the historical chapter (XIX.), in which the repulsive horrors of the "jugulant" method are duly set forth. "Hujus morbi curatio," said Sydenham, "in repetitâ venæsectione fere tota est." Remorseless bleeding is associated with the names of Tommasini and Rasori of the Italian school early in the present century, and even as lately as 1835 Bouillaud recommended for universal adoption the plan of bleeding "coup sur coup," which went by the name of the "jugulant method." By this plan pneumonia was to be *strangled* almost in its birth. Even Celsus did not go so far, and must not be represented as an indiscriminate bleeder. Speaking of pneumonia ("*De Re Medicâ*," lib. IV., cap. VII.), he says: "Oportet, si satis validæ vires sunt, sanguinem mittere, sin minores, cucurbitulas sine ferro præcordiis admovere."

Two chapters follow the historical review we have referred to—of these one is devoted to treatment in general, the other to the treatment of some particular symptoms. The authors conclude that pneumonias, from the therapeutist's point of view, may be divided into two classes:—

"The first of these, and at the present time numerically by far the larger, is sure of recovery, yet owes much to the skill and resource of the physician in rendering a painful affection as tolerable as possible. In the other, the more severe yet the smaller class, the final issue in life or

death depends largely—we cannot, of course, say how largely—on treatment, the treatment, that is to say, of certain common symptoms such as delirium, dyspnœa, and sleeplessness, of whose pernicious effect we are not more certain than of the validity of remedies in large measure to relieve them." (Pages 443 and 444.)

With these sensible words before them we leave our readers to form their own judgment of a work which we have come to look upon as one of the best monographs on Pneumonia in the English language.

The Elements of Practical Medicine. By ALFRED H. CARTER, M.D., Lond.; M.R.C.P.; Physician to the Queen's Hospital, Birmingham; Emeritus Professor of Physiology, Queen's College, Birmingham; &c. Sixth Edition. London: H. K. Lewis. 1891. Pp. 496.

IT seems almost unnecessary to write anything on the subject of such a well-known work as that before us—a work of which six editions have appeared in some eight or nine years. This edition has been carefully revised; Dr. G. F. Crooke has assisted the author in the preparation of the section on General Pathology, and Mr. Malcolm Morris in the preparation of that on Diseases of the Skin. In spite of this the book has not increased materially in size, the author wisely preferring to give a broad and general sketch of his subjects rather than to go into minutiæ. The style is clear and readable; and the author has successfully avoided the fault, so often committed in small books on a large subject, of packing so much information into a limited space as to become dry and almost unintelligible.

We must call attention to a few points which struck us in perusing the book. Renal dropsy is said (p. 6) to begin in the loose connective tissue of the eyelids or scrotum. That is true only of the dropsy of acute Bright's disease, or acute exacerbations supervening on chronic cases; in the chronic forms the dropsy, although still called renal, begins usually in the feet, being dependent on cardiac failure.

On page 11 we read that the clot which forms in a ligatured artery "extends in a backward direction until it meets a current of blood sufficiently strong to arrest its further progress." We do not think that is a very intelligible account of the process; the clot extends backwards until some pervious branch of the

artery is reached, through which the blood is circulating, and by means of which circulation further stagnation of the blood is prevented; it is only the stagnant and motionless blood in the artery that clots.

We are glad to see Diabetes included among the General Diseases, and not relegated to the section on the kidneys—organs which have singularly little to do with this disease.

In the section on Lung Diseases we are sorry to see Dr. Carter does not make any distinction between râles and rhonchi, but uses these terms as synonymous. We think it is far preferable to limit each of these terms to a distinct meaning, as many of the most careful and accurate writers now do (*e.g.*, Bristowe, Hilton Fagge, F. Taylor, &c.), and to apply the term rhonchus only to dry, continuous, musical sounds, and râle only to moist and interrupted bubbling sounds.

In a book written mainly for beginners we think more attention might have been paid to the methods of physical examination:—Thus some tables might have been introduced illustrating the main facts relating to heart murmurs; the examination of the urine and sputum (especially the latter) might have been described at somewhat greater length. The Methods and Principles of Diagnosis must come before Treatment, and if in a book for junior students there is not room for everything, we should prefer to see the latter curtailed rather than the former.

On the whole, however, the book is very well arranged, and evidently has been found useful by many. We would especially recommend junior students commencing their hospital studies, who have not time or knowledge to read more complete text books, to read day by day in this work the articles on the cases which they see; they would find that in this way they were laying a solid foundation for future superstructure.

The Medical Annual and Practitioners' Index. A Work of Reference for Medical Practitioners. 1891. Ninth Year. Bristol: John Wright & Co.

Some idea of the labour and care bestowed on the production of this excellent Annual may be gathered from the fact that the index of the present volume contains nearly three thousand references to diseases and remedies. Everything that forethought and familiarity with the wants of the medical profession can suggest

has been done to preserve and increase the well-won reputation of this book, as a reliable guide in the manifold difficulties that constantly arise in general practice. Nor has the specialist been forgotten—his journals and monographs have been laid under tribute.

To enumerate the editors that have made this Annual so great a favourite with the profession would be to give a list of many of the best known names in British, French, and American medical literature.

The volume tells of unremitting care on behalf of all concerned in its production, and a fixed determination to deserve success.

Reference is facilitated by an alphabetical arrangement of subjects and a good index. Research is made a comparatively easy task by a synopsis of previous editions. Illustrations have been introduced where necessary to elucidate the text, and some of these are, in the present edition, coloured.

We hope the profession will show their appreciation of the work by securing copies. We are in an age of progress, and the medical practitioner who keeps abreast of the times is the one who ultimately succeeds. The man who is content with borrowing a friend's journal or "looking over" a brother practitioner's annual is not of much account in medicine.

Railway Injuries, with special reference to those of the Back and Nervous System, in their Medico-Legal and Clinical Aspects. By HERBERT PAGE, M.A., M.C., Cantab. ; F.R.C S. ; Surgeon to St. Mary's Hospital, and Lecturer on Surgery at its Medical School; Consulting Surgeon to the Cumberland Infirmary ; Examiner in Surgery, University of Cambridge. London: Charles Griffin & Co. 1891. Pp. 148.

THE book before us is the outcome of Mr. Page's experience in the seventeen years during which he held the post of surgeon to the London and North Western Railway Company, a position in which his opportunities of observing all sorts of railway injuries have been exceptionally extensive. On this account alone, a treatise on a subject about which he is so eminently qualified to speak with authority would demand the most careful perusal by all surgeons, and especially by those who may be called upon, either by the patient or by the railway company, to deal with railway injuries.

But independently of the qualifications and position of the author,

the book itself deserves the most careful study. It is, in our opinion, one of the safest guides through the complications and intricacies which beset the medico-legal aspects of these railway injuries. Throughout the book we are struck by the absence of all bias, by the judicial spirit which pervades its pages, by the fairness with which symptoms and opinions are weighed, and the justice of the conclusions which are drawn. Thus, in speaking of the neurasthenic conditions which not uncommonly follow on these accidents, and which in themselves are serious enough, the author says (p. 29):—"On the one hand, we may hear the condition regarded as evidence of serious and irremediable pathological change in the chief centres of the nervous system; and, on the other hand, no clear history of pronounced shock or collapse at the time of the injury being forthcoming, the symptoms are deemed unreal, and the *bona fides* of the patient is called in question. The mistakes are at opposite ends, and I hardly know which is the worse for the patient."

The present book is based upon one written by Mr. Page in 1883, entitled "Injuries of the Spine and Spinal Cord and Nervous Shock;" but it differs in many particulars from it. In the former work much space was devoted to proving that the nervous symptoms observed after railway injury were not to be attributed to meningo-myelitis of the brain and spinal cord—the theory maintained by Mr. Erichsen in his book on "Concussion of the Spine." In the present volume the arguments employed in 1883 find no place, as the above theory has been definitely abandoned by all those who have to do with injuries of this class, not only in these countries and in America, but in France, Germany, and elsewhere. The view now generally adopted, and which the author so ably upheld in his former work, is "that most of the strange nervous symptoms so commonly seen after railway accidents, were not due to physical injury sustained by the spinal cord, but were the more or less immediate concomitants of the profound mental emotion aroused by the unquestionably special features and incidents of every collision. . . . The accompaniment of some form of injury to extra-spinal, muscular, and ligamentous structures was at the root of the entirely erroneous notion that the nervous symptoms were due to lesion in that part of the central nervous system which has its seat in the spinal column."

The first chapter deals with these various forms of extra-spinal muscular and ligamentous injuries under the title of "Injuries to

the Back." At page 20 there is a paragraph which all surgeons who have to deal with railway injuries should ponder over carefully. After seventeen years of constant observation under circumstances peculiarly favourable, the author says:—"I have seen no case of acute traumatic meningitis following railway injury, nor any in which I could satisfy myself of the presence of subacute or chronic meningitis as the basis of the symptoms of general nervous shock which are frequently seen after railway collision." And yet, how often such a plea, urged in law courts in order to induce juries to assess large damages, is supported by medical testimony. We trust that in the future we shall hear less in such cases of that mysterious injury, "concussion of the spine," with its equally mysterious meningo-myelitic sequelæ. Again, it is sometimes urged that, although the injury to the back may at the outset have been obscure, there is a danger that ultimately, as a consequence of the injury, the symptoms of degeneration of the spinal cord may supervene. The author, admitting the great importance of such a statement, has given the subject careful study, and after following up the after history of such cases of injury, and after inquiry "made by direct oral and written communication with many professional brethren in all parts of the country, he comes to the conclusion that it must be admitted that secondary and remote degeneration of the spinal cord, in cases where there has been no distinctive evidence of injury, is very rare indeed. Nor have I been able to discover any grounds for thinking that the injured in railway collisions, numbering many thousands since the first accident happened, have afforded a larger proportion of those degenerative system diseases of the spinal cord . . . than have those persons who have not been exposed to the same influences." Chaps. II. and III. deal with general nervous shock. The author calls attention to the difference between the collapse which comes on immediately after the receipt of a severe injury and the shock which is produced by purely mental causes, such as the fright attending a railway collision, in which the manifestations may be both delayed and prolonged; and he quotes the words of Mr. Furneaux Jordan:—"In certain temperaments, wrought into a state of extreme excitement, a comparatively severe injury may not be attended with that degree of shock which, under other circumstances, would be seen. In those cases, however, shock is usually deferred, and not altogether averted; and it may be all the more severe, seeing that reactionary mental exhaustion, itself

a kind of shock, is superadded to the effects of bodily injury," "The collapse, however," says the author, "which in these railway accidents accompanies serious bodily injury, such as laceration of limb or fracture of bone, always excepting the collapse from severe concussion of the brain, is very rarely followed by the train of after symptoms indicative of general nervous shock." Again, he says, "It will be one aim of this work to explain how it is that the after-results of even very trifling initial shock from railway accident are often more lasting and serious than are the later nervous symptoms of those in whom the early collapse with extensive bodily injury, was originally more profound." In the latter half of Chapter II. the various symptoms of general nervous shock are separately discussed, and they may shortly be grouped together under the head of the symptoms of neurasthenia. The author draws a broad distinction between this condition and genuine hysteria, a distinction which, we think, ought to be more generally recognised and insisted on than is frequently the case. At the same time, we must bear in mind that these two conditions, neurasthenia and hysteria, are closely linked together, and are very often found side by side in the clinical picture presented to us. Neurasthenia, as it were, prepares the nervous system, or puts it into a suitable state, for the origination of true hysterical disturbance. "A very common sequence of events is for hysterical disturbances to be grafted on to the neurasthenical state—grafted on to it, and thereafter growing with it. I mean no more than this when I say that they are linked together."

The evil effects of anxious attention being fixed upon these neurasthenic symptoms is dwelt upon. A prolonged dispute about the claim for compensation and the anxieties and worries of a law suit aggravate the symptoms necessarily. The author suggests that under such circumstances it would be more appropriate to call them "litigation symptoms" than those of general nervous shock.

Chapters IV. and V. are very happily and appropriately entitled "The Fright Neuroses," a term which the author prefers to the more commonly used expression "traumatic hysteria." He discusses at length functional paraplegia, and gives some very interesting examples, not only of this condition, but of hypnotic catalepsy and allied disorders. The last three chapters deal respectively with treatment, malingering, and the medico-legal aspect of railway injuries. The book concludes with a bibliography and an index. We have only been able to allude cursorily to some of the many

interesting questions raised in this book, and we have only been able to do but scanty justice to it. It is undoubtedly one of the best books extant on the subject; it is written in a clear and interesting style; it is well brought out and clearly printed in good type on good paper; and it is a book which every medical man would do well to read before he presents himself for examination and cross-examination in the witness box in a railway case.

Illinois State Board of Health: Medical Education, Medical Colleges, and the Regulation of the Practice of Medicine in the United States and Canada. 1765-1891. *Medical Education and the Regulation of the Practice of Medicine in Foreign Countries.* By JOHN H. RANCH, M.D., Secretary. Springfield, Illinois: H. W. Rokker, State Printer and Binder. 1891.

THOSE who are familiar with American medical literature know how thoroughly our Transatlantic brethren carry out their work. The present volume, which is produced by the Illinois State Board of Health, is no exception to the rule; it embraces the medical institutions of the whole world.

Such a book became a necessity in Illinois, which at present has a population of over five millions, of whom one million are foreigners. Its enormous resources attracted a population from all parts of the Continent and from Europe. A rich alluvial soil produced all the cereals and fed enormous numbers of cattle, sheep, and swine; and its immense fields of bitumen, occupying an area of 30,000 square miles, made it a great manufacturing centre; with all these advantages superadded to its position on the shores of the great lakes, Illinois could not fail to attain success. Even prior to the discovery of America by Europeans the Illini tribe of Indians —whose remembrance is perpetuated in the name of the State— recognised its natural resources.

All peoples except the English appear to have prized Illinois. Marquette, the first to explore it, in 1673 reported favourably of the country to Louis XIV., his countryman. La Salle, in 1679, was also favourably impressed, and in 1682 three French settlements were made—Crevecour, Kaskaskia, and Cahokia. When the French were driven from Canada, Illinois (1763) became English, but our politicians thought the great west was of no value. The teachings of the First Bellamont, the true founder of the greatness of the United States, were neglected, and in 1783

Illinois was ceded to the United States. Had there been no knowledge of its mineral wealth and fruitful soil the indifference of the English statesmen would have had some excuse, but as early as 1669 French settlers raised coal and pig iron, and lead had already been discovered.

To-day so many strangers crowd into the State, and the immigrants include so many doctors, that the State has found it necessary to give a detailed account of the medical institutions throughout the world, so that the Illinois Medical Board may be able to determine the value and validity of foreign diplomas, especially German ones.

Notes on the Examination of the Sputum, Vomit, Fœces, and Urine. By Sidney Coupland, M.D.; Physician to the Middlesex Hospital. London: H. K. Lewis. 1891. Pp. 52.

Dr. Coupland has contrived to put together in a very small space a great deal of information on the examination of sputum, &c. His little book is calculated to be of much use to students in their hospital practice. The information contained in it has not been very accessible to the medical student, being scattered through works on Practice of Medicine, and Practical Pathology, and in them often mixed up with other matters of doubtful or obscure import, which render the subject more difficult and confused. This little book is admirably clear; large type is employed to mark out the headings, and practical directions are very fully given.

The general excellence of the work requires us to call attention to a few points we could wish altered. In describing the method of staining tubercle bacilli, we are directed to select and place on a cover-glass "an opaque particle of sputum *to* (*sic*) *size of half a pea.*" Surely this is too large an amount. In our experience a particle the size of the head of a good-sized pin is quite sufficient, if spread out sufficiently thin, to cover any ordinary-sized cover-glass.

The normal specific gravity of the urine is said to be 1020–1025. These figures are too restricted; many urines whose specific gravity is considerably under 1020 must be looked on as normal.

In the guaiacum test for hæmoglobin we are told to use a few drops of tincture of guaiacum. If the test is carried out in this way it will often lead to disappointment. The solution of guaiacum

must be fresh (which tinct. guaiaci often is not), and is best made at the moment of use by adding a grain of guaiacum resin to a little methylated spirit in a test tube.

But, after all, these points to which we have called attention are of minor importance, and do not seriously detract from the high practical value of the little book, which we cordially recommend to all students who are attending a clinical hospital, and watching cases there. Many practitioners also will be instructed by a reference to its pages.

Are the Effects of Use and Disuse inherited? An Examination of the view held by Spencer and Darwin. By WILLIAM PLATT BALL. London: Macmillan & Co. 1890. Pp. 156.

THE importance of this question is thus put by the author:—"It is evident that we can produce important changes in the individual." "We can strengthen (or weaken) his body; we can improve (or deteriorate) his intellect, his habits, his morals." But "will such modifications be inherited by the offspring of the modified individual?" "Can the philanthropist rely on such a tendency as a hopeful factor in the evolution of mankind?—the only sound and stable basis of a higher and happier state of things being, as he knows or ought to know, the innate and constitutionally-fixed improvement of the race as a whole. If acquired modifications are impressed on the offspring and on the race, the systematic moral training of individuals will in time produce a constitutionally moral race, and we may hope to improve mankind even in defiance of the unnatural selection by which a spurious but highly popular philanthropy would systematically favour the survival of the unfittest and the rapid multiplication of the worst. But if acquired modifications do not tend to be transmitted, if the use or disuse of organs or faculties does not similarly affect posterity by inheritance, then it is evident that no innate improvement in the race can take place without the aid of natural or artificial selection."

The author then goes through the most important facts which have been supposed to prove the truth of what he calls "use-inheritance," and shows that they will all bear other and more natural explanation. Through these details it would be impossible for us to follow him; but his criticisms and arguments are always fair and ingenious, and in many, if not all, cases just and cogent.

He concludes that the theory of use-inheritance is discredited as unnecessary, unproven, and improbable, and that the modern reliance on it is misplaced :—

"The effects of use and disuse, rightly directed by education in its widest sense, must, of course, be called in to secure the highly essential, but nevertheless *superficial*, *limited*, and *partly deceptive*, improvement of individuals and of social manners and methods; but as this artificial development of already existing potentialities does not directly or readily tend to become congenital, it is evident that some considerable amount of natural or artificial selection of the more favourably varying individuals will still be the only means of securing the race against the constant tendency to degeneration, which would ultimately swallow up all the advantages of civilisation. The selection influences by which our present high level has been reached and maintained may all be modified, but they must not be abandoned or reversed in the rash expectation that State education, or State feeding of children, or State housing of the poor, or any amount of State Socialism or public or private philanthropy, will prove permanently satisfactory substitutes. If ruinous deterioration and other more immediate evils are to be avoided, the race must still be to the swift and the battle to the strong. The healthy Individualism so earnestly championed by Mr. Spencer must be allowed free play. Open competition, as Darwin teaches, with its survival and multiplication of the fittest, must be allowed to decide the battle of life independently of a foolish benevolence that prefers the elaborate cultivation and multiplication of weeds to the growth of corn and roses. We are trustees for the countless generations of the future. If we are wise we shall trust to the great ruling truths that we assuredly know, rather than to the seductive claims of an alleged factor of evolution for which no satisfactory evidence can be produced."

The Barbarity of Circumcision as a Remedy for Congenital Abnormality. By Herbert Snow, M.D. (Lond.), &c.; Surgeon to the Cancer Hospital. London: J. & A. Churchill. 1890. 8vo. Pp. 58.

This is practically a sweeping condemnation of the operation of circumcision—an attempt to "contribute, in some small measure, towards the abolition of an antiquated practice involving the infliction of very considerable suffering upon helpless infants."

Dr. Snow considers, first of all, circumcision as a religious rite, in a brief historical sketch of its origin and significance, detaching from it all symbolic meaning, and putting it forth "divested of

the traditional sanctity which is possibly largely answerable for some of the views promulgated by medical authors." He discusses the opinions put forward in support of the practice under the heads of cleanliness, continence, diminished liability to venereal contagion, and to cancerous disease; and dismisses the three last as based on insufficient evidence, while the first is no sufficient reason for submitting a patient to "mutilation." We cannot agree with Dr. Snow on these points; nor do we think he has successfully combated the facts and figures put forward by the supporters of the operative treatment of phimosis. Special stress is laid on the risks attending the operation, and a very *ex-parte* statement is made as to the consequences which sometimes attend it. "Septic infection, hæmorrhage" [established only by one case from a family of "bleeders"], "and subsequent sloughing of the part, have to be sedulously guarded against; and on the Continent, at least, the resources of modern antiseptic surgery have been specially invoked." We are fortunate enough never to have seen any of these "grave risks" to which Dr. Snow refers; and, after considerable experience of the operation of circumcision, we have no hesitation in affirming that it is in every way a better and safer procedure, in cases that ought to be submitted to surgical interference at all, than either the method of dilatation or Furneaux Jordan's "nicking" operation—a half-hearted effort, which seems specially to commend itself to Dr. Snow.

Lo Sperimentale. Anno XLV. Memorie Originale. Fascicolo I. Firenze. 1891. Pp. 92.

Our Florentine contemporary publishes occasionally fasciculi of original papers, and the first of these for the current year is now before us. It contains four memoirs—on chronic meningitis, on the afferent tracts of the spinal cord, on disinfection of surroundings infected with the virus of tetanus, and on the histogenesis of the thyroid gland. It is the third of these papers of which we propose to give a brief summary.

Dr. Luigi Bombicci has conducted a series of experiments in the pathological laboratory of the University of Bologna upon the effects of certain chemical and physical agents on the tetanic virus. The disinfectants examined were chlorine, sulphurous anhydride, milk of lime, commercial chloride of lime, and tar. After stating the results, often unsatisfactory and contradictory,

of previous investigations, he describes his own experiments in detail, and concludes from them—that an atmosphere saturated with *chlorine* destroys tetanic spores in fifteen minutes; that air, nearly or completely saturated with *sulphurous anhydride*, does not destroy the spores in twenty-four hours, but attenuates their pathogenic action, this effect beginning within an hour of exposure to the cause; that *white-wash* is altogether inert; that *commercial hypochlorite of calcium* in ten per cent. solution is a sure disinfectant for application to walls, but is powerless in five per cent. or weaker solutions; that a wash composed of ten parts "chloride of lime," twenty-five caustic lime and 100 water is effective to whiten and disinfect walls, so far as tetanic virus is concerned; that *coal-tar* is a good disinfectant for application to wooden enclosures.

It is true that tetanus being rare—and in epidemic form very rare—special measures for the destruction of its virus will rarely be required; but it may fairly be inferred that the relative values of disinfectants are probably the same for other microbes than those to which Signor Bombicci's researches have been directed.

Atlas of Clinical Medicine. By Byrom Bramwell, M.D.; F.R.C.P., Edin.; F.R.S., Edin.; Assistant Physician to the Edinburgh Royal Infirmary; &c., &c. Vol. I. Part I. Edinburgh: Printed by T. & A. Constable at the University Press. 1891. Folio. Pp. 48.

In the ranks of the medical profession there is no lack of earnest and indefatigable workers at the present day; but among the band of toilers, men like Jonathan Hutchinson, Benjamin Ward Richardson, and Byrom Bramwell stand out prominently as the sole authors of first-class medical periodicals. The "Illustrations of Clinical Surgery" and the "Archives of Surgery" of Hutchinson, the "Asclepiad" of Richardson, the "Studies in Clinical Medicine" and now the "Atlas of Clinical Medicine" of Byrom Bramwell are all astonishing examples of untiring industry and unflagging zeal on the part of their respective authors.

The work, of which the first instalment now lies before us, will consist of a series of coloured, black and white, and photogravure plates, measuring $14\frac{1}{2}$ by $10\frac{1}{2}$ inches, with a detailed description of the plates and text. It is anticipated that the complete Atlas will include at least ninety plates, and at least three yearly volumes, each of which will be complete in itself, and will cost original

subscribers a guinea and a half. Each yearly volume will contain thirty plates, and will be issued in four fasciculi. The first fasciculus of Volume I. appeared punctually on May 1, 1891, and the the subsequent fasciculi, or "Parts," are due on September 1, December 1, 1891, and March 1, 1892.

It is intended that each fasciculus shall contain at least 32 folio pages of letterpress, giving a detailed description of many of the diseases illustrated in the plates, and, whenever it is possible, a complete clinical history of the individual cases figured in the Atlas, as well as articles on clinical and systematic medicine, with woodcut illustrations.

The first part, or fasciculus, contains 48 folio pages, equal to at least 144 octavo (ordinary book) pages. It is evident that neither trouble nor expense has been spared in the execution of the work, which reflects the greatest credit on author and publishers alike. The larger portion of this first fasciculus is devoted to the kindred subjects of Myxœdema and Sporadic Cretinism (Hilton-Fagge), which latter affection, the author states, is really the infantile form of myxœdema. The symptoms of myxœdema and of exophthalmic goitre are contrasted in a short section occupying pages 26 and 27, and the remainder of the fasciculus is taken up with a full and illustrated clinical and pathological account of Friedreich's ataxia.

The fasciculus before us is rich in illustrations. First come three highly artistic coloured portraits of myxœdema. These are followed by two plates in black and white, consisting of seven figures representing sporadic cretinism, or infantile myxœdema. With this part, also, are issued a photogravure plate showing lymphadenoma in a man, and a tinted crayon representing "melancholia with fear." These are numbered respectively "Plate VIII." and "Plate XXVI.," so they are published in advance, presumably to demonstrate the character of the whole work.

There are singularly few misprints, printers' errors, and mis-spellings; but "*Wockenschrift*," "Burdack," and "Argyle-Robertson" need correction. This last mis-spelling is especially strange in a work written by an Edinburgh physician, and printed in the Scottish capital.

We congratulate Dr. Byrom Bramwell on the classical tone of this instalment and earnest of his new work, and we trust that he will be granted health and strength to bring it to a successful termination.

The Daughter: her Health, Education, and Wedlock. Homely Suggestions for Mothers and Daughters. By WILLIAM M. CAPP, M.D. Philadelphia and London: F. A. Davis. 1891. Pp. 144.

TURNING over the leaves of this little book, we came upon a paragraph of such preposterous absurdity that "we read no more that day." On page 49 we are informed that "no attempt need be made to teach the letters of the alphabet until the child is about nine years of age"; and that "it is a fact repeatedly demonstrated that children then first taught their letters under experienced teachers at twelve years rank the same as others of the same age who began attending school at the age of six." Undeterred by this nonsense, we, after some natural hesitation, took up "The Daughter" again and read it through. Having done so, we recommend it to mothers. Dr. Capp's professed "aim is to enable the mother to second more intelligently the efforts of the medical adviser when he comes professionally into the family, and to offer some practical considerations affecting woman in her family relation." On the whole, the attempt is successful and the work is useful. Occasionally we find a passage which we should like to blot—as where the use of stimulants is discouraged on the ground that they cause the heart to beat faster, and so waste some of our pre-established total of pulsations; but such eccentricities are comparatively few. We approve specially of the remarks on the duty of mothers to explain, as delicately as they alone can, to their maturing daughters matters connected with the reproductive system which it is too commonly the custom to leave to be discovered by more questionable and objectionable means.

Clinical Manual for India, compiled for the use of the Students of the Madras Medical College. By DEP. SURG.-GEN. C. SIBTHORPE, F.K.Q.C.P., M.R.I.A.; Fellow of the University of Madras. Third Edition. Madras: Higginbotham & Co. 1890. 8vo. Pp. 420.

THE fact that this is a third edition speaks sufficiently for the merit of this Manual. The work has been considerably enlarged without becoming unwieldy, and Mr. Sibthorpe obtained the co-operation of experts in preparing special Sections. Of the usefulness of the Clinical Manual in India we have abundant

evidence; and we have no doubt that our own students, and of our practitioners not a few, would find a copy of the work most convenient for reference. The arrangement of subjects is excellent, and a copious index is supplied.

A Laboratory Course of Pharmacy and Materia Medica. By WILLIAM ELBORNE. London: C. Griffin & Co. 1890.

MR. ELBORNE is a teacher who has had considerable experience in Owens College and elsewhere, and he has now published an excellent volume, which may be used in conjunction with any of the existing text-books on Materia Medica and Pharmacy.

A student who has gone through the course laid down by Mr. Elborne could not fail to acquire an extensive knowledge of practical pharmacy and of dispensing.

The book is well arranged and clearly written, and we can warmly recommend it for adoption by teachers and students of practical pharmacy.

The main portion of the text is distributed under three headings:—

Part I. treats of Chemical Pharmacy. It is concise and to the point, and the practical laboratory work is arranged under 10 types, illustrating the more important processes.

Under Galenical Pharmacy, Part II., are considered the processes and manipulations by which the crude vegetable and animal substances are prepared for medicinal use.

In Part III. we have a capital course of Practical Dispensing laid down.

Autograph prescriptions are given, rendered into full Latin, and translated into English. Then follow practical observations and notes upon dispensing, incompatibility, &c., embodying a very considerable amount of information.

CREASOTE HYPODERMICALLY.

M. JOISSENE recommends the following prescription for the hypodermic use of creasote:—Oil of sweet almonds, 120 grammes; pure creasote, 8 grammes.—Mix. 20 to 40 grammes of this solution to be injected into the lumbar region. Twenty-four hours should be allowed to intervene between each injection. He has not found it produce any kidney trouble.—*Bulletin Médicale.*

PART III.

SPECIAL REPORTS.

REPORT ON MIDWIFERY AND GYNÆCOLOGY.

By Andrew J. Horne, Fellow and Examiner in Midwifery, Royal College of Physicians of Ireland; ex-Assistant-Physician to the Rotunda Hospital, Dublin.

CÆSAREAN SECTION AND THE BEST MATERIAL OF UTERINE SUTURE.

Munchmeyer (*Arch. für Gynäkologie*, Band 37, Heft 2) reports three cases of Cæsarean section performed according to Sänger's method, making the record of the Dresden clinic twenty-eight Cæsarean sections with three maternal deaths and one fœtal death. He also adds seven cases of amputation of the uterus, with the removal of the fœtus, performed for septic infection; for uterine tetanus; for threatened hæmorrhage after incision of the uterus and the extraction of the fœtus, caused by occluded cervix with contracted pelvis; for highly contracted pelvis, death of the fœtus, albuminuria and beginning septic infection, and two cases of highly contracted pelvis, with failure of the uterus to contract after incision, and a case of cancer of the cervix, which had extended so far as to render amputation necessary. All of the mothers in these seven cases recovered, and two of the children survived.

M. has had the opportunity of examining, *post mortem*, two uteri on which the Cæsarean section had been performed. The patients had survived several months, and died by some intercurrent disease. Microscopic examination of the chromic acid catgut sutures employed found them holding the parts firmly in good apposition, and the suture material itself undissolved, and resembling in firmness silver wire. The silk suture, however, which had been used to close the abdominal wall had been partly absorbed. It is Munchmeyer's opinion that chromic acid catgut is the best suture for the uterus, and silk the best for the abdominal wall.

Ahlfeld (*Centralblatt für Gynäkologie*, No. 30, 1890,) states that he has induced labour in 118 cases, from whose study he draws the

following conclusions:—The results of the induction of labour compare most favourably with those of Cæsarean section—80 per cent. of 111 cases leaving the hospital in good health. In 101 children born in contracted pelvis, 60 per cent. were discharged in good health.

The method of introducing a bougie is best adapted to private and hospital practice. Labour should be induced as late as possible, and the smallest true conjugate which justifies the operation.

ON THE TREATMENT OF BREECH PRESENTATIONS.

Winter (*Deutsche Medicinische Wochenschrift*, February, 1891) contrasts the different line of treatment to be adopted in breech and foot presentations, and the more favourable prognosis offered by the former variety. Expectancy is the attitude to be adopted in footing cases, but interference is necessary if in breech presentations delay becomes dangerous to mother or child. The indications for bringing down a foot in breech cases and completing delivery are complications endangering the life of mother or child, such as slowing of pulsation in the cord, impending asphyxia, hæmorrhage, septicæmia, &c. In prolapse of the cord, eclampsia and contracted pelvis, this method of procedure may also have to be adopted. The writer quotes the opinions of various authors as to the particular form of contracted pelvis in which the operation can be performed with beneficial results. He considers that in normal conditions it is wrong, because it is unnecessary, and while not entirely harmless for the mother may be very detrimental to the child. In eighteen cases where delivery speedily followed drawing down of the foot, seventeen of the children survived, while in nine cases, where delivery was more tediously accomplished, four of the children were lost.

The writer advocates bringing down a foot in preference to traction with the fingers, loop or blunt hook, all of which are either tedious or dangerous. If these were so safe an instrument for the breech as forceps for the head, there would be no necessity for bringing down the feet. All the breech forceps invented have been failures.

If the foot cannot be brought down, the author recommends traction with the finger, inserted between the thigh and abdomen of the child, and if this be unsuccessful, a skein of worsted or silk may be employed; but this is often difficult or impossible of application. Poppel advocates introducing it by means of a Bellocq's

sound. Winter strongly recommends an instrument invented by Bunge, and called a "loop carrier." It consists of a curved metal staff, grooved on its concave surface, and containing a thick hempen cord covered with gutta-percha, and about eighteen inches long. The latter is passed by means of the staff between the thighs and abdomen of the child, the staff is withdrawn, and the loop can then be used as a tractor.

His conclusions are :—(1.) Normal cases to be treated by the expectant method. (2.) Bring down a foot in cases of prolapse of the cord, eclampsia and contracted pelvis, but not, as a rule, before the os is well dilated. (3.) Complete the labour in breech cases where desirable by bringing down a foot, and proceed at once to extraction of the child. If the breech is too low in the pelvis for this operation, use the finger as a tractor, and should this prove unsuccessful, employ Bunge's instrument or a skein of wool.

THE VAGINAL OPERATION IN EXTRA-UTERINE PREGNANCY.

Fenger (*American Journal of Obstetrics*, April, 1891). The writer begins by giving the history of a case in which he was called upon to operate.

He then reviews at some length the question of the indications for, and the advisableness of, the vaginal operation in extra-uterine pregnancy, and its relation to laparotomy for the same condition. First, the anatomical condition calling for, or making possible, the vaginal operation.

The vaginal operation is to be considered only when the sac or fœtus is located so deeply in the recto-uterine fossa that it pushes the walls of this region downward, so as to form a prominent tumour in the posterior wall of the vagina.

He then quotes Hecker (Bandl) as having found the fœtus expelled through the rectum in 28 out of 132—that is, in 20 per cent. of extra-uterine pregnancies. This frequency, however, does not indicate that the sac was always situated deep down in Douglas' fossa, as the opening into the intestinal canal might be located high up above the rectum in almost every part of the tract.

The writer then enters into the "Dangers of the Operation," and sums up with the following conclusions :—

1. In cases where the fœtal cavity is still aseptic, the vaginal operation exposes the patient to the danger of sepsis in the fœtal sac, which cannot be guarded against. Abdominal section gives far better means of protection against septic infection.

2. Hæmorrhage from the placenta cannot be controlled by the vaginal method.

3. Delivery of the child at full time is usually difficult, and thus dangerous to the mother, by the vaginal operation, but easy by the abdominal.

4. If the fate of the child is to be considered, the vaginal operation must be abandoned.

5. Where suppuration has set in, in an extra-uterine pregnancy presenting low down in the pelvis, and the placental circulation has ceased, the vaginal operation may be considered in comparison with the abdominal.

EFFERVESCING POWDER AS A HYPNOTIC.

In the November number of the *Archivio Italiano per le malattie nervose* gives an account of some observations made in the lunatic asylum of Ferrara on the effects of the effervescing mixture of sodium bicarbonate and tartaric acid. 124 observations were made on 40 patients suffering from insomnia due to various morbid conditions. He found that the mixture exhibited in the evening produced a decided hypnotic effect. Half of the patients, however restless and however unfavourably situated for sleep, slept within half an hour of administration, most of the remainder within an hour, few at a later period. The sleep produced was calm and not profound, natural, and lasting from 5 to 8 hours. The usual dose was 6 grains of the mixed powders, exceptionally increased as far as 12. Young people were found to be more susceptible to the influence of the remedy than adults or the old. The effect is attributed to the absorption of carbonic acid and its well-known anæsthetic action.

MEDICAL EDUCATION OF WOMEN IN EDINBURGH.

The Scottish Association for the Medical Education of Women has published its first Report, and from it we learn the medical ladies in the modern Athens do not agree like "birds in their little nests." The Edinburgh School of Medicine for Women was founded in 1879, but is not, the Association considers, "conducted on sound and catholic principles," nor has it been "truly an open and public establishment." Fresh efforts were necessary, and this Association was constituted in January, 1890. At first great difficulty was experienced in obtaining clinical teaching for the students attached to the new school, the older one having secured a monopoly, which it refused to share, of the Leith Infirmary. This difficulty has been overcome, the Royal Infirmary having been opened to lady students. Twenty-eight students are now upon the rolls of the College, of whom ten obtain clinical instruction in Glasgow.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Samuel Gordon, M.D., F.R.C.P.I.
General Secretary—W. Thomson, M.D.

SECTION OF OBSTETRICS.

President—S. R. Mason, M.B., F.R.C.S.I.
Sectional Secretary—Andrew J. Horne, F.R.C.P.I.

Friday, March 13, 1891.

The President in the Chair.

Subperitoneal Myoma of the Uterus.

Mr. O'Callaghan exhibited a subperitoneal myoma of the uterus, removed from a patient, aged thirty-five. Hæmorrhage was easily controlled by deep stitches; the edges of the capsule were turned in and united by an uninterrupted suture, a Köberle's drain was introduced, and patient made a perfect recovery. Mr. O'Callaghan showed a fibro-cystic tumour of uterus, which weighed twenty-four pounds. In this case, after progressing favourably for five days, complete obstruction of the bowel took place, owing to constriction of the colon by dragging of the pedicle. Re-opened wound and performed a median-colotomy, but patient sank soon after. Mr. O'Callaghan also exhibited submucous fibroid of uterus. After dilating the uterus with Tait's dilators, made incision around base of fibroid, and enucleated it successfully. Good recovery.

Account of a New Form of Uterine Support, or Roller Pessary.

Dr. More Madden said the difficulty of ensuring the retention *in situ* of any of the ordinary forms of uterine pessary commonly employed is one of the most frequent troubles met with in gynæcological practice. With the view of obviating this difficulty, he has recently suggested to Messrs. Arnold, of London, the idea which they have very satisfactorily

carried out in the Roller Pessary which he now exhibited. The advantages claimed for this instrument are—first, greater facility of introduction, which in the roller pessary is favoured by the rotation of the upper arm of the support; secondly, greater certainty of filling the post-cervical *cul-de-sac*, and so overcoming the tendency of the displaced organ, whether it be the uterus or the ovary, to descent therein; thirdly, the obviation of the constant pressure occasioned by the ordinarily-used pessary; and fourthly, the circumstance that the new support affords no fixed point or shelf for the deposit of discharges or septic matter. Moreover, there is another,

DR. MORE MADDEN'S NEW ROLLER PESSARY.

and, as he believed, a still more important advantage connected with the rotatory movement of the upper arm of this instrument—namely, a greatly diminished risk of the pessary slipping out of its place. In nine cases out of ten that accident results from the expulsive efforts of the patient to dislodge a mass of hardened fæces from the upper rectum. Such a displacement of the roller pessary is prevented by the rotatory action of its upper arm, by which the support is made to travel slightly upwards, instead of being forced downwards, as in other pessaries, by the fæcal pressure through the recto-vaginal walls. The instrument in question is applicable in all cases of posterior displacements of the uterus, and also in those less generally recognised, but not less important, instances of ovarian prolapse into Douglas's fossa.

New Instrument for Intra-Uterine Work.

Dr. More Madden also exhibited a new instrument for intra-uterine work, combining the action of the ordinary curette with that of a tenaculum. In this instrument the desired action, either as a curette or as a a tenaculum, can be exactly and easily regulated and directed from without by a peculiar form of screw adjustment worked from the handle.

Endo-Uterine Therapeutics.

Dr. More Madden read a paper on the above subject. With regard to the methods of modern intra-uterine treatment and the conditions by which this is called for, the writer's observations are founded on a clinical experience extending over many years, and embracing upwards of ten thousand gynæcological cases treated in his wards or in the extern department of the Mater Misericordiæ Hospital, Dublin. Of the cases admitted

into those wards during the last fifteen years, endo-uterine treatment was found necessary in 35 per cent. The two essential points in all such treatment are—first, that the orifice and cavity of the uterus, if not already sufficiently dilated, should be mechanically expanded; and secondly, that whatever application is resorted to should be brought into direct contact with the diseased endometrium. For the first purpose the slow, painful, and hazardous methods of dilatation by sponge or laminaria tents have been long abandoned by Dr. More Madden, who employs in their stead the rapid cervical dilator which Messrs. Arnold have brought out in accordance with his suggestion, and which he finds more effictive and quicker in its action than Hegar's or other similar dilators. The second object is especially necessary as a preliminary to endo-uterine treatment in cases of congestive hypertrophy and chronic subinvolution, in which the lining membrane of the uterus is commonly overlaid by an impervious pseudo-membranous albuminoid neoplasm evolved from the proliferating cilia of the diseased surface. Or else the endometrium, in many cases, is so thickly bathed in the tenacious morbid secretion therefrom, as effectually to protect the underlining tissues from the action of any remedial agent introduced into the uterine cavity until that pseudo-membrane and secretion are removed by the curette. For these objects Dr. More Madden recommends, firstly, the use of Duke's cervical curette to cleanse out the entrance to the womb; and secondly, the employment of his own "Adjustable Uterine Curette," by which the endometrium may be thoroughly denuded, and at the same time by the hæmorrhagic discharge thus occasioned the congestion of the hyperæmic and hypertrophied organ may be most effectually relieved.

In the treatment of subinvolution the writer advocates the introduction, in some instances, of a small tampon saturated in a combination of tannic acid and turpentine, which he terms "Tanno-terebinth." This acts as an immediate stimulant and astringent on the uterine structures, and in suitable cases is allowed to remain in the cavity from 12 to 24 hours, unless sooner expelled from the then generally much contracted uterus. The vaginal glycerine-saturated tampon commonly employed in cases of this kind, although unquestionably serviceable in many instances, is messy and troublesome in its use both to patient and practitioner, and hence for some time past the writer has generally adopted the boric acid, or "dry treatment," recommended recently by Mr. Duke, and which he has found generally very satisfactory as a substitute for the older method of treatment. He also strongly deprecates the employment of the ordinary siphon syringe for any endo-uterine purpose, and believes that this should be replaced by an irrigator such as the one he suggested many years ago, and which, having been since appropriated by others, without any acknowledgment is depicted in the paper of which this is an abstract. The foregoing measures must, however, be supplemented by

more active agents in those more serious cases of long standing, fundal or corporeal endometritis and subinvolution, in which the disintegrated and eroded endo-uterine mucous membrane becomes the seat of various pathological changes, extending to the submucous structures and utricular glands, and often associated with those so-called fungosities resembling papillary epithelioma, which, if unchecked, may ultimately degenerate into that condition. In such cases it is that the cautery, actual or potential—the first in the form of igni-puncture, and the latter in the shape of the stronger caustics, acid, nitrate of mercury, fuming nitric acid, or chromic acid, &c.—may be justifiably resorted to in endo-uterine treatment. In conclusion, Dr. More Madden briefly details the result of his clinical experience of these various applications, the circumstances that indicate their use, the dangers that may attend their abuse, and the methods of their employment.

After some remarks from Dr. Lombe Atthill,

The President thought, in selecting dilators for use, the amount of dilatation required should be considered. In some cases it is only necessary to dilate to a small amount to admit a curette; in other cases a large amount of dilatation is required to admit the finger to explore the uterus. He wished to know in what cases of chronic intra-uterine disease Dr. Madden recommended intra-uterine douching with hot water. After labour or abortion, or operations on the interior of the uterus, it is frequently done, but in these cases the cervical canal is patulous. In chronic cases the cervix should be kept in a state of sufficient dilatation to admit a Boseman's catheter, if intra-uterine douching were carried out daily, as recommended by Dr. More Madden. As to the use of caustic, the most important point was to apply the caustic directly to the mucous membrane, which is frequently very difficult on account of the mucous secretion filling the uterus and cervical canal.

Dr. More Madden, in reply, expressed his satisfaction that one of the chief objects of his paper had been attained by the very valuable observations which Dr. Atthill and the President had contributed to this discussion. With many of their views he entirely coincided, and on other points on which, although he could not fully agree with a few of their opinions, he thought their views entitled to much consideration. Having, however, already taken up so much of the time of the Section, Dr. More Madden would not venture to trespass further on their patience by any additional remarks on the subjects just referred to.

SECTION OF ANATOMY AND PHYSIOLOGY.

President—Prof. J. M. Purser, M.D., F.R.C.P.I.
Sectional Secretary—A. Birmingham, M.B.

Friday, March 20, 1891.

The President in the Chair.

Exhibits.

1. Dr. W. H. Thompson showed a skull in which the superior semicircular canals were exposed. He also showed some specimens illustrating the anatomy of the middle and internal ears, and remarked upon the inaccurate description of these parts found in some text-books. Prof. Birmingham agreed with Dr. Thompson's remarks as to the position of the semicircular canals, and pointed out some other relations of the part frequently described inaccurately.

2. Prof. Birmingham exhibited a malformed skull with an enormous foramen magnum ($2\frac{1}{2}$ inches diameter), the cervical vertebral with incomplete neural arches, and several other peculiarities.

The President and Prof. Cunningham made some remarks on the rarity of the specimen; they considered that the incomplete cervical canal was a case of spina bifida.

Prof. Birmingham, in replying, thought it probable that the large foramen magnum might be accounted for by an extension of the spina bifida into the first modified vertebra of the skull—adopting the vertebrate theory of the skull.

Reports of Collective Investigations in the Anatomical Departments of Trinity College and the Catholic University Medical School.

I. *Distance of the Lower Border of the Kidney from the Iliac Crest.* Reported by (*a*) W. H. Thompson, F.R.C.S.Eng.—Fifty-three subjects were examined, 26 of whom were males, while 27 were females.

In the males the mean distance on the right side was 32 mm., while on the left side the distance was 40 mm.

In the females the average distance on the right side was 27 mm., that on the left being 30 mm.

In six males the right kidney was at a higher level than the left, in two on the same level. In seven females the right kidney was the higher, while in three both kidneys were at the same level.

In females the kidneys were at a somewhat lower level than in males, this being more apparent on the right side. Thus, 8 of the 27 female kidneys on the right side, and 5 on the left, were either as low as or

below the crest, compared with 2 right and no left kidneys in the males as low as the crest, neither of the 2 right kidneys was below the crest.

The mean distance from the mid-dorsal line to the centre of the lower border of the kidney was $7\frac{1}{4}$ cm. on the right side in males and 7 on the left. The measurement in females was 7 cm. on both sides.

(*b*) J. H. M'Gee (Melbourne).—Seventeen subjects were examined—7 males, 10 females. The average distance of the kidney from the ilium was—*In the male*, right side. $1\frac{1}{4}$ inches; left side, $1\frac{1}{2}$ inches. *In the female*, right side, $1\frac{1}{12}$ inches; left side, $1\frac{3}{5}$ inches. In the males one right kidney was found overlapping the crest and a left touching it. In the females three were overlapping on the right side, one on the left. On the left side of one female the kidney was atrophied and high up in the hypochondrium.

II. *Formation of the Thyroid Axis.* Reported by (*a*) J. J. Long, B.A.—Seventy-five arteries were examined. In 33 of these the artery was normal.

In 22 cases the posterior scapular arose separately from the third stage of the subclavian.

In 21 cases an artery (transversalis cervicis), furnishing both posterior scapular and superficial cervical, arose from the third stage of the subclavian. In 4 instances a trunk giving off posterior scapular, superficial cervical, and supra-scapular, arose from the third stage of the subclavian.

(*b*) P. Brady and J. Dunne.—Forty-five parts were examined. *The inferior thyroid* arose from thyroid axis in 41, with transverse cervical from thyroid axis in 4. *The ascending cervical* arose from inferior thyroid in 40, from transverse cervical in 5. *The transverse cervical* arose from thyroid axis and divided into superficial, cervical, and posterior scapular in 36; it arose from thyroid axis, with inferior thyroid and divided, in 4; arose from axis, and was continued as superficial cervical in 5. *Superficial cervical* arose from transverse cervical 40 times, from thyroid axis direct 5 times. *Posterior scapular* arose from transverse cervical 40 times, from 3rd stage of the subclavian 5 times on right side. *Supra-scapular* arose from thyroid axis 40 times, from 1st stage of the subclavian 5 on right.

III. *The Distribution of the Last Dorsal and First Lumbar Nerves.* Reported by Montague Griffin, B.A.—Fifty subjects were examined, yielding most interesting results, which could not be done justice to in a short report.

IV. *The Occurrence of Meckel's Diverticulum Ilei.* Reported by (*a*) Hugh Hunter, B.A.—Sixty-two subjects were examined. In one (a male) the diverticulum was found. Its distance was 49 inches from the ileo-cæcal valve, and it sprang from near the mesenteric attachment of the bowel. It, with a good length of the ileum, formed part of the contents

of a large femoral hernia. It hung quite free and had no connection other than its root.

(*b*) A. J. M. Blaney, B.A.—Twenty-eight subjects were examined; no trace of a diverticulum was found.

V. *Distribution of Cutaneous Nerves on the Dorsum of the Foot and Toes.* Reported by (*a*) F. A. Dixon, B.A.—Fifty-four feet were examined. The nerve-supply was furnished in two chief ways.

In the first the musculo-cutaneous supplied the inner side of the great toe and both sides of the four clefts, thus leaving the outer side of the little toe to be supplied by the external saphenous nerve. The branch to the innermost cleft usually communicated with the internal terminal branch of the anterior tibial nerve, but this latter supplied merely the skin of the web at the root of the cleft.

In the second the musculo-cutaneous supplied the inner side of the great toe and the two inner clefts, the other two clefts, as well as the outside of the little toe, being supplied by the external saphenous. The branch of the anterior tibial to the inner cleft corresponded in distribution and connections to that in the first variety.

(*b*) J. M. Redington.—Twenty-eight feet were examined. *The inner side* 1*st toe* was supplied by musculo-cutaneous in 17, by anterior tibial 9, by both conjoined in the remaining 2. *Outer side of* 1*st toe* by anterior tibial 21, musculo-cutaneous in 1, both conjoined in 6. *Inner side* 2*nd toe*, anterior tibial 19, musculo-cutaneous 1, both conjoined 8. *Outer side* 2*nd toe*, musculo-cutaneous 19, anterior tibial 6, both conjoined 3. *Inner side* 3*rd toe*, musculo-cutaneous 25, tibial 2, both conjoined 1. *Outer side* 3*rd toe*, musculo-cutaneous 23, external saphenous 4, both conjoined 1. *Inner side* 4*th toe*, musculo-cutaneous 23, saphenous 4, both conjoined 1. *Outer side* 4*th toe*, musculo-cutaneous 24, saphenous 5, both conjoined 1. *Inner side* 5*th toe*, musculo-cutaneous 19, saphenous 7, both conjoined 2. *Outer side* 5*th toe*, saphenous 24, musculo-cutaneous and saphenous 4.

2. *Variability of the Level of Attachment of the Lower Limb to the Vertebral Axis in Man.*

Professor Birmingham read a paper on the above subject. He referred to Paterson's investigations on the position of the limb in different mammals, and to Rosenberg's theory of the headward shifting of the sacrum and consequent shortening of the movable portion of the vertebral column. Rosenberg advanced the view that the vertebral column in man had in its primitive form 25 movable vertebræ in front of the sacrum, the present form has 24, and the future form will have 23. In the same paper he describes a separate cartilaginous rudiment of a rib in the 1st lumbar transverse process of the embryo, which disappears by fusing with the transverse process at a later period. Professor Birming-

ham sought for examples of either the ancient or the future form of vertebral column as described by Rosenberg, and in less than 50 subjects he found two examples of the former, none of the latter. In each of these specimens the sacrum was developed one segment further back than normal. In each the cervical vertebræ were 7 in number, the dorsal 12, and the *lumbar* 6, the sacral 5, the coccygeal 3. That this condition was due to a shifting of the sacrum backwards was shown by the nerves. The last nerve which normally contributes to the lower limb (lumbo-sacral) plexus is the 3rd sacral or *nervus bigeminus*. This is an easily-recognised nerve; it divides into two parts—one goes to the sacral, the other to the pudic plexus; it normally comes out beneath the 3rd sacral vertebra, conversely the vertebra beneath which it comes is the true 3rd sacral. In both specimens referred to above, the nervus bigeminus came out beneath the 2nd piece of the sacrum, consequently the 2nd piece of the sacrum in these cases is the true 3rd sacral vertebra. In similar fashion the coccygeal nerve came out beneath the last piece of the sacrum. The relations of both these nerves show that the sacrum has been developed one segment further back than normal. Besides, in one of the specimens there were two well-developed lumbar ribs, connected to the pedicle and transverse process of the 1st lumbar vertebra; in the other case, on one side only was a lumbar rib present. Here, then, is the ancient type of vertebral column with 25 movable vertebræ, and here also the 13th rib, which has been suppressed owing to the advance of the lower limb, appears again, reproducing the condition of this part of the column and of the ribs found in the gibbon.

The Section then adjourned.

SECTION OF PATHOLOGY.

President—E. H. Bennett, M.D.

Sectional Secretary—J. B. Story, F.R.C.S.I.

Friday, April 3, 1891.

The President in the Chair.

Cirrhosis of Lung.

Dr. Finny read a paper upon cirrhosis of the lung.

The President, Drs. Bewley and Beatty spoke, and Dr. Finny replied.

Histology of Tubercular Tissues after treatment with Koch's Tuberculin.

Dr. M'Weeney read a paper on this subject. [It will be found at page 468.]

The PRESIDENT and MR. STORY discussed the communication, and

DR. M'WEENEY replied that, with regard to the Chairman's remarks, he would not like to draw any positive conclusion as to the action of the lymph on the tubercular tissue when the greatest authorities had declined to do so as yet. But he would say that, on the whole, no changes were found which were not met with in a similar case that had not received the Koch treatment. While thanking Mr. Story for the kindness of his remarks, he regretted that, owing to the "reaction" against the Koch treatment, both among patients and surgeons, it would be impossible for him to procure pieces of Koch-treated lupus tissue, for the present at least.

Case of Syringo-myelia.

DR. O'CARROLL read a communication on a case of syringo-myelia. A man aged thirty-two, a telegraph clerk, had worked at his business for two years and a half, during which he had suffered from a progressive spastic paralysis. He then came to Dublin for treatment, being able to walk a mile and a half to the local railway station. In Dublin he in some way lost his way, was picked up and brought to hospital by the police, and was found on admission to have a stammering speech, an imbecile manner, and to be almost completely paraplegic. He ran through a series of symptoms during the succeeding ten days, which included incontinence of urine and fæces, the rapid formation of bullæ and bedsores, and an immediately *ante-mortem* temperature of 108·2°. *Post-mortem* there were sero-sanguineous patches in the pia mater, the brain seemed normal, the central canal of the cord was dilated, for about four inches in the lower dorsal and upper lumbar regions. The dilatation was in the central canal; sections showing the epithelial lining around the canal, with breaks in its continuity such as might be accounted for by rapid dilatation of the tube. The original disease from which the patient suffered could only be guessed at from the symptoms as detailed by the patient's sister; that from which he suffered in hospital seemed to be a myelitis, which turned out to be associated with effusion into the ventricle of the cord.

DRS. FINNY and BEWLEY spoke on the case.

DR. M'WEENEY drew attention to Schulze's view that the usual method of formation of syringo-myelia was the break-down of a gliomatous tumour which had undergone mucoid degeneration. Cavities thus formed usually lay outside and behind the central canal. The case laid before the Academy by Dr. O'Carroll was of the extremest interest on account of the cavity being really a dilatation of the central canal, as was proved by the microscopic slides, in which the cavity was seen to be surrounded by columnar ciliated epithelium. Dr. M'Weeney drew attention to the case reported by von Recklinghausen and Holschewnikoff, in which the

cavity extended from the level of the 2nd cervical to the 4th dorsal vertebra, and in which symptoms not unlike progressive muscular atrophy were found. He thought that the case reported by these observers threw considerable light on that so ably brought forward by Dr. O'Carroll.

Septic Phlebitis.

Mr. Tobin gave particulars of a case of septic phlebitis treated by him in St. Vincent's Hospital. The disease was secondary to the removal of portions of varicose veins, and originated not in the operation wounds but in a small ulcer near the ankle. On the 9th day after operation symptoms of acute septic phlebitis were fully developed. The patient had had two marked rigors; temp. 105°. All the superficial veins on inside of leg and three inches of long saphenous vein were engaged. Mr. Tobin reflected the skin from the affected parts and removed every diseased vein following each till an apparently sound point had been reached. The subsequent history was satisfactory. The wound healed rapidly. No further rigor occurred. Severe constitutional disturbance, indicating that secondary centres of infection had formed during the delayed interference, continued, and it was not till a month after the operation that the patient's temperature was normal, and his condition in every way satisfactory. Remarking on this case, Mr. Tobin said that surgeons had not taken sufficiently to heart Ogston's teachings as to "micrococcus poisoning;" and in consequence of looking on infective processes as diseases of the blood, they held back from operating on cases that were not beyond rescue.

Dr. M'Weeney drew attention to the fact that the latest researches, notably those of Rosenbach, went to show that the staphylococcus pyogenes aureus and albus grew equally well whether exposed to the air or not. The smallness of the abscesses in the lung might be accounted for by the fact that they had started from a single coccus.

Mr. Tobin replied.

Subconjunctival Lipoma.

Mr. Story exhibited microscopic sections of a subconjunctival lipoma, which grew between the superior and external rectus—the usual situation for such growths.

CARDIAC OSSIFICATION.

In a letter to the editor of the *Times and Register*, October 25th, 1890, Dr. Reading writes of a *post mortem* :—"I found the left auricle encircled on the inner surface by a ring of ossification, three-fourths of an inch wide, and extending almost the entire distance round it."

SANITARY AND METEOROLOGICAL NOTES.

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Vital Statistics

For four Weeks ending Saturday, April 25, 1891.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	April 4.	April 11.	April 18.	April 25.		April 4.	April 11.	April 18.	April 25.
Armagh -	25·8	36·1	25·8	10·3	Limerick -	16·2	24·3	25·6	22·9
Belfast -	29·1	25·1	31·3	24·9	Lisburn -	19·3	9·7	9·7	29·0
Cork -	29·9	24·0	28·6	16·2	Londonderry	28·5	32·1	17·8	16·0
Drogheda	33·8	8·5	16·9	33·8	Lurgan -	20·5	35·9	41·0	25·7
Dublin -	22·7	29·8	26·6	22·6	Newry -	14·0	24·6	17·6	21·1
Dundalk -	21·8	17·5	4·4	21·8	Sligo -	14·4	48·1	14·4	24·1
Galway -	33·6	30·3	50·4	20·2	Waterford -	57·9	25·5	41·7	32·4
Kilkenny	16·9	21·1	21·1	21·1	Wexford -	25·7	12·8	25·7	4·3

In the week ending Saturday, April 4, 1891, the mortality in twenty-eight large English towns, including London (in which the rate was 20·9), was equal to an average annual death-rate of 22·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 26·2 per 1,000. In Glasgow the rate was 30·1, and in Edinburgh it was 23·8.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 25·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·6 per 1,000, the rates varying from 0·0 in eight of the districts to 16·2 in Waterford—the 25 deaths from all causes registered in that district comprising 4 from whooping-cough and 3 from diarrhœa. Among the 131 deaths from all causes registered in Belfast are 2 from scarlatina, 1 from whooping-cough, 3 from enteric

fever, and 3 from diarrhœa. The 5 deaths in Armagh comprise 2 from whooping-cough.

In the Dublin Registration District the registered births amounted to 191—92 boys and 99 girls; and the registered deaths to 162—80 males and 82 females.

The deaths, which are 53 below the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·9 in every 1,000 of the estimated population. Omitting the deaths (numbering 8) of persons admitted into public institutions from localities outside the district, the rate was 22·7 per 1,000. During the first thirteen weeks of the current year the death-rate averaged 30·2, and was 2·6 under the mean rate in the corresponding period of the ten years 1881–1890.

Twelve deaths from zymotic diseases were registered, being 2 over the low number for the preceding week, but 11 under the average for the 13th week of the last ten years. They comprise 1 from influenza (complicated with pneumonia), 3 from whooping-cough, 1 from enteric fever, and 1 from dysentery.

Only 8 cases of enteric fever were admitted to hospital, being 5 under the number of admissions for the preceding week; 8 enteric fever patients were discharged, 1 died, and 53 remained under treatment on Saturday, being 1 under the number in hospital on Saturday, March 28.

The hospital admissions include, also, 3 case of measles, but no cases of scarlatina or of typhus were received. Six cases of measles, 1 case of scarlatina, and 3 cases of typhus remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had risen from 43 for the week ended March 21 to 48 for the following week, fell this week to 30, or 18 below the average for the corresponding week of the last ten years. The 30 deaths consist of 18 from bronchitis, 10 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, April 11, the mortality in twenty-eight large English towns, including London (in which the rate was 20·0), was equal to an average annual death-rate of 22·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 25·0 per 1,000. In Glasgow the rate was 30·4, and in Edinburgh it was 19·3.

The average annual death-rate in the sixteen principal town districts of Ireland was 27·0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·6 per 1,000, the rates varying from 0·0 in nine of the districts to 9·3 in Waterford—the 11 deaths from all causes registered in that district comprising 2 from whooping-cough, 1 from enteric fever, and 1 from diarrhœa. Among the 113 deaths from

all causes registered in Belfast are 1 from scarlatina, 1 from typhus, 2 from whooping-cough, 2 from simple continued fever, 3 from enteric fever, and 1 from diarrhœa. The 37 deaths in Cork comprise 1 from simple continued fever and 1 from enteric fever.

In the Dublin Registration District the registered births amounted to 243—127 boys and 116 girls; and the registered deaths to 207—94 males and 113 females.

The deaths, which are 3 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 30·6 in every 1,000 of the estimated population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 29·8 per 1,000. During the first fourteen weeks of the current year the death-rate averaged 30·2, and was 2·4 under the mean rate in the corresponding period of the ten years 1881-1890.

Eighteen deaths from zymotic diseases were registered, being 6 in excess of the low number for the preceding week, but 5 under the average for the 14th week of the last ten years. They comprise 2 from whooping-cough, 1 from diphtheria, 5 from enteric fever. and 1 from erysipelas.

The number of cases of enteric fever admitted to hospital is 7, being 1 under the number for the preceding week and 6 under that for the week ended March 28. Thirteen enteric fever patients were discharged, and 47 remained under treatment on Saturday, being 6 under the number in hospital at the close of the preceding week.

The hospital admissions include, also, 2 cases of measles, 1 case of scarlatina (the only case of that disease admitted during the last five weeks), and 1 of typhus. Eight cases of measles, 2 of scarlatina, and 2 of typhus remained under treatment in hospital on Saturday.

Forty-seven deaths from diseases of the respiratory system were registered, being 17 over the number for the preceding week, but 3 under the average for the 14th week of the last ten years. They comprise 28 from bronchitis, 8 from pneumonia or inflammation of the lungs, and 3 from croup.

In the week ending Saturday, April 18, the mortality in twenty-eight large English towns, including London (in which the rate was 20·5), was equal to an average annual death-rate of 22·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·6 per 1,000. In Glasgow the rate was 25·9 ; in Edinburgh it was 21·7.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 27·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts

were equal to an annual rate of 1·6 per 1,000, the rates varying from 0·0 in Newry, Drogheda, Wexford, Dundalk, Sligo, and Lisburn, to 6·9 in Waterford—the 18 deaths from all causes registered in the last-named district comprising 2 from whooping-cough and 1 from diarrhœa. Among the 141 deaths from all causes registered in Belfast are 1 from scarlatina, 1 from typhus, 1 from diphtheria, 2 from enteric fever, and 4 from diarrhœa. The 19 deaths in Limerick comprise 1 from typhus and 1 from simple continued fever.

In the Dublin Registration District the registered births amounted to 234—131 boys and 103 girls; and the deaths to 186—79 males and 107 females.

The deaths, which are 4 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 27·5 in every 1,000 of the estimated population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 26·6 per 1,000. During the first fifteen weeks of the current year the death-rate averaged 30·0, and was 2·3 under the mean rate in the corresponding period of the ten years 1881–1890.

Only 10 deaths from zymotic diseases were registered, being 11 below the average for the corresponding week of the last ten years and 8 under the number for the week ended April 11. They comprise 7 from whooping-cough. No deaths from any of the forms of continued fever—typhus, enteric, or simple continued—were recorded.

Only 5 cases of enteric fever were admitted to hospital, against 7, 8, and 13, respectively, for the three weeks preceding. Four enteric fever patients were discharged, and 48 remained under treatment on Saturday, being 1 over the number in hospital on Saturday, April 11.

Seven cases of measles were admitted to hospital compared with 2 admissions in the preceding week: 5 patients were discharged, and 10 remained under treatment on Saturday, being 2 over the number in hospital at the close of the preceding week.

The hospital admissions include, also, 3 cases of typhus and 1 case of scarlatina; 5 cases of the former and 3 of the latter disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had risen from 30 for the week ended April 4 to 47 for the following week, fell to 38 or 3 under the average for the corresponding week of the last ten years. The 38 deaths comprise 22 from bronchitis and 11 from pneumonia or inflammation of the lungs.

In the week ending Saturday, April 25, the mortality in twenty-eight large English towns, including London (in which the rate was 21·0), was equal to an average annual death-rate of 24·3 per 1,000 persons

living. The average rate for eight principal towns of Scotland was 22·1 per 1,000. In Glasgow the rate was 27·3, but in Edinburgh it was only 17·9.

The average annual death-rate in the sixteen principal town districts of Ireland was 22·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·4 per 1,000, the rates varying from 0·0 in eight of the districts to 5·2 in Armagh—one of the 2 deaths from all causes registered in that district having been caused by whooping-cough. Among the 112 deaths from all causes registered in Belfast are 3 from whooping-cough, 4 from enteric fever, and 1 from diarrhœa. The 17 deaths registered in Limerick comprise 2 from typhus and 1 from simple continued fever. The 9 deaths in Londonderry comprise 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 200—113 boys and 87 girls; and the registered deaths to 156—76 males and 80 females.

The deaths, which are 46 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 23·0 in every 1,000 of the estimated population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 22·6 per 1,000. During the first sixteen weeks of the current year the death-rate averaged 29·6, and was 2·6 under the mean rate in the corresponding period of the ten years 1881–1890.

Only 8 deaths from zymotic diseases were registered, being 2 under the low number for the preceding week and 13 below the average for the 16th week of the last ten years. They comprise 4 from whooping-cough, 1 from enteric fever, and 1 from diarrhœa.

There has been a gradual decline in the weekly number of cases of enteric fever admitted to hospital from 13 for the week ended March 28 to 2, the number of admissions for this week. Fifteen enteric fever patients were discharged, 1 died, and 34 remained under treatment on Saturday, being 14 under the number in hospital at the close of the preceding week.

The hospital admissions include, also, 3 cases of measles, but no cases of scarlatina or of typhus were received. Five cases of measles, 2 of scarlatina, and 4 of typhus remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 32, being 14 below the average for the corresponding week of the last ten years, and 6 under the number for the week ended April 18. The 32 deaths comprise 19 from bronchitis and 10 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of April, 1891.

Mean Height of Barometer, - - -	29·964 inches.
Maximal Height of Barometer (on 20th, at 9 p.m.),	30·342 „
Minimal Height of Barometer (on 5th, at 9 a.m., and 29th, at 9 p.m.), - - - -	29·383 „
Mean Dry-bulb Temperature, - - -	45·4°.
Mean Wet-bulb Temperature, - - -	42·6°.
Mean Dew-point Temperature, - - -	39·4°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·243 inch.
Mean Humidity, - - - - -	80·5 per cent.
Highest Temperature in Shade (on 30th) - -	65·7°.
Lowest Temperature in Shade (on 10th), - -	33·1°.
Lowest Temperature on Grass (Radiation) (on 1st),	26·1°.
Mean Amount of Cloud, - - - -	58·5 per cent.
Rainfall (on 14 days), - - - -	1·553 inch.
Greatest Daily Rainfall (on 3rd), - - -	·482 inch.
General Directions of Wind, - - -	S.E., E.N.E.

Remarks.

April, 1891, was a cold, rather dry and March-like month. The mean temperature, rainfall, and rainy days were all below the average. On only one day, the 30th, did the thermometer rise above 60° in the shade.

In Dublin the arithmetical mean temperature (45·7°) was 2·0° below the average (47·7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 45·4°. In the twenty-five years ending with 1889, April was coldest in 1879 (the cold year) (M. T. = 44·5°), and warmest in 1865 and 1874 (M. T. = 50·4°). In 1886 the M. T. was 46·3°, in 1887 it was as low as 45·1°, in 1888 it was (as in 1891) only 45·7°, in 1889 it was 46·1°, and in 1890 it was 47·3°.

The mean height of the barometer was 29·964 inches, or 0·114 inch above the average value for April—namely, 29·850 inches. The mercury rose to 30·342 inches at 9 p.m. of the 20th, and fell to 29·383 inches at 9 a.m. of the 5th, and 9 p.m. of the 29th. The observed range of atmospherical pressure was, therefore, 0·959 inch—that is, a little less than an inch.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 45·4°, or 4·8° above the value for March, 1891. Using the formula, *Mean Temp.* = *Min.* + (*max.*—*Min.* × ·476), the value also becomes 45·4°, or 2·0° below the average mean temperature for April, calculated in the same way, in the twenty-five years, 1865–89, inclusive (47·4°). The arithmetical mean of the

maximal and minimal readings was 45·7°, compared with a twenty-five years' (1865–1889 inclusive) average of 47·7°. On the 30th, the thermometer in the screen rose to 65·7°—wind, S.S.W.; on the 10th the temperature fell to 33·1°—wind, calm. The minimum on the grass was 26·1°, on the 1st.

The rainfall was 1·553 inches, distributed over 14 days. The average rainfall for April in the twenty-five years, 1865–89, inclusive, was 2·055 inches, and the average number of rainy days was 15·2. The rainfall, therefore, was considerably below the average, while the rainy days were also deficient. In 1877 the rainfall in April was very large—4·707 inches on 21 days; in 1882 also 3·526 inches fell on 20 days. On the other hand, in 1873, only ·498 of an inch was measured on 8 days; and in 1870 only ·838 of an inch fell, also on 8 days. The fall in 1890 was 1·575 inches on 14 days.

No solar halos were seen. There were lunar halos on the 14th and 15th. The atmosphere was more or less foggy on the 4th, 5th, 9th, 10th, 11th, 26th, and 27th. High winds were noted on 9 days, but did not reach the force of a gale on any occasion. There was no snow or sleet, but hail fell on the 1st and 7th. The temperature exceeded 50° in the screen on 18 days, compared with 9 days in March, 14 days in February, and 5 days in January. It did not fall below 32° in the screen on any night. The minima on the grass were 32°, or less, on 12 nights, compared with 20 nights in March, 17 in February, and 21 nights in January. The mean lowest temperature on the grass was 34·1° (as in 1890 also), compared with 34·4° in 1889, 34·6° in 1888, and 31·6° in 1887.

During the period ending Saturday the 4th a large area of low barometer came in over Ireland from the Atlantic, causing strong south-easterly winds and heavy falls of cold rain and sleet almost until the end. The maximal rainfall was ·482 inch on Friday the 3rd. Hail was observed on Wednesday the 1st.

Still continuing cold throughout, the weather of the week ended Saturday the 11th was at first dull and rainy, afterwards dry and hazy but at times bright. During the first two days an elongated V-shaped depression stretched across central Europe from Ireland to North Germany. To the N. of this "furrow" of low pressure strong, cold S.E. winds prevailed, and heavy rains fell at many English and German stations, thunder occurring on Sunday at Loughborough, Cambridge, and Paris. To the S. of the "hollow," variable S.W. winds of but moderate strength, warmer but rainy weather prevailed. During the period from Tuesday to Thursday, inclusive, a clearly-defined cyclonic system travelled in a curve from the S.W. of Ireland to Brittany, across Northern France and Belgium to the neighbourhood of Berlin, where the system disappeared. It caused cold, dry, and fine weather in Scotland and Ireland, in which countries

its N.E. winds prevailed; but in England the weather was dull, cold, and rainy. On Friday the 10th a fall of the barometer in the W. caused southerly winds and a rise of temperature in Ireland, but on Saturday the barometer rose again and the wind backed to E., becoming as dry and searching as ever. In Dublin the mean height of the barometer was 29·973 inches, pressure ranging from 29·383 inches at 9 a.m. of Sunday (wind, S.E.) to 30·195 inches at 9 p.m of Thursday (wind, N.N.W.). The corrected mean temperature was 43·1°, the mean dry bulb temperature at 9 a.m and 9 p.m. being 43·0° The thermometers in the screen rose to 51·8° on Friday having been down to 33·1° during the previous night. Rain fell in measurable quantity on three days, the total amount being ·289 inch, of which ·185 inch was referred to Sunday. The prevailing wind was N.N.E. Hail fell on Tuesday the 7th.

The "Dawn of Spring" would be an appropriate description of the weather of the week ended Saturday the 18th, for—although temperature was still low by night and the wind was often from a cold point and searching—the days were more genial than of late, and the showers were of soft rain and gave an unwonted impetus to vegetation. In the period from Sunday to Tuesday an anticyclone was found over Scandinavia, while a depression passed south-eastwards from the S.W. of Ireland across France to the Gulf of Genoa. The latter system caused heavy rains in southern Ireland and many parts of France, and snow fell on the Dublin Mountains early on Monday morning. In the wake of this depression a new area of high pressure appeared on Tuesday off the S.W. of Ireland, and fine weather set in, with N.W. winds, interrupted by easterly sea breezes on the east coast during the daytime. Lunar halos were seen at many British and Irish stations on the evenings of Tuesday and Wednesday the 14th and 15th. Between this latter day and the close of the week a cyclonic system of no great intensity travelled south-eastwards down the North Sea, causing fresh N.W. to N. winds and cold showers of rain, sleet, and hail at many stations, especially on the east coast of Great Britain. In Ireland the weather was finer and milder. In Dublin the mean atmospherical pressure was 30·172 inches. The corrected mean temperature was 46·6°, the mean dry bulb temperature at 9 a.m. and 9 p.m. was 46·4° The rainfall was ·238 inch on three days. The prevailing wind was N.N.W.

Cold, dry weather and parching easterly and north-easterly winds held all through the week ended Saturday, the 25th. Throughout the period an anticyclone, or area of high barometrical pressure, was found over Scotland; whereas pressure was relatively low over Spain, France, and the Bay of Biscay. Hence, fresh to strong easterly or north-easterly winds were prevalent in the British Islands, and on Wednesday and Thursday they reached the force of a moderate gale at many exposed seaboard stations. The rainfall during the week was on the whole trifling,

but a considerable fall of cold rain spread westwards from the N.E. of England to the E. and S.E. of Ireland in the interval between Tuesday morning and Thursday morning. On this latter day, also, considerable downpours of rain occurred over the greater part of France. On Friday the northern anticyclone moved southwards, and decreased in intensity. In Dublin the mean height of the barometer was 30·224 inches. The corrected mean temperature was 45·6°, or 1° below that of the previous week. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 45·7°. Rain fell in measurable quantity on only one day—Tuesday—to the amount of ·060 inch. The wind was constantly E. to N.E. The mean temperature was 0·4° below that of the last week of January, 1·9° below that of the last week of February, and 0·9° below that of the first week of March.

In the closing period of the month—26th to the 30th, inclusive—at first of an easterly type, cold and hazy, the weather afterwards became warmer and softer, with fresh S.W. winds and frequent showers. In general, therefore, conditions were favourable and much more genial than for many weeks back. At the beginning of the period an anticyclone stretched from the east of Ireland across England and the North Sea to Holland and Belgium; it was accompanied by fine, cold, hazy, weather. On Monday depressions arrived off the N.W. of Scotland and also the W. of France, and by Wednesday gradients for S.W. winds were fully established over Western Europe. A considerable, but short-lived, rise of temperature followed, the thermometer in the shade rising on Thursday, the 30th, to 67° at Cambridge, 66° in Dublin, 65° at Loughborough, 64° in London, and 63° at Parsonstown and Yarmouth. The thermometer in the screen fell to 36·1° on Sunday, and rose to 65·7° on Thursday. The rainfall was ·071 inch on three days. The prevailing winds were S.W. and N.W.

The rainfall in Dublin during the four months ending April 30th has amounted to only 3·203 inches on 46 days, compared with 9·045 inches on 59 days during the some period in 1890, 8·345 inches on 74 days in 1889, 8·090 inches on 58 days in 1888, and a 25 years' average of 8·466 inches on 66·2 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall during April, 1891, amounted to 2·920 inches, distributed over 13 days; ·950 inch falling on the 1st, and ·720 inch on the 3rd. The total fall since January 1st, 1891, equals 5·725 inches on 43 days.

At Cloneevin, Killiney, Co. Dublin, the rainfall in April was 1·190 inches on 12 days. The total fall since January 1 has been only 2·430 inches on 38 days—the averages of the six previous years for the same four months being 7·746 inches, on 58 days.

PERISCOPE.

PATHOLOGY OF DELIRIUM TREMENS.

The *Australian Medical Gazette* is responsible for the following extract from a temperance sermon, said to have been delivered by the Rev. Dr. Talmage in New York:—"Dr. Sax, of France, has recently discovered something which all drinkers ought to know. He has found out that alcohol, in every shape, whether of wine, or brandy, or beer, contains parasitic life called bacillus potumaniæ. By a powerful microscope these living things are discovered, and when you take strong drink you take them into the stomach and then into your blood; and getting into the crimson canals of life, they go into every tissue of your body and your entire organism is taken possession of by those noxious infinitesimals. When in delirium tremens a man sees every form of reptilian life it is only these parasites of the brain in exaggerated size. It is not a hallucination that the victim is suffering from. He only sees in the room what is actually crawling and rioting in his own brain. Every time you take strong drink you swallow these maggots, and every time the imbiber of alcohol in any shape feels vertigo, or rheumatism, or nausea it is only the jubilee of these maggots."

EXCISION OF THE BLADDER.

M. Pawlik, Prague, reports a case of the total excision of the bladder from a woman. The patient first came under his notice for persistent hæmaturia; he found a polypus, which he excised with a thermo-cautery. The following year, 1889, the patient returned stating that the hæmaturia had recommenced. He now determined on its radical cure, and on the 27th of August he removed the whole of the bladder, suturing the ureters to the urethra. The patient made a good recovery, though when she walks the urine escapes involuntarily.—*Le Mercredi Médical*, No. 44.

CHEWING GUM.

The Boston *Medical and Surgical Journal* is responsible for the following extract from "the monthly Bulletin of a certain State Board of Health:—"Chewing Gum a Healthful Exercise.—We have seen the most excitable young lady, with a highly strung nervous organisation, under its magic influence become as quiet and contented as the well-fed cow that lies in the barnyard chewing its cud. We know of nothing that will, with anything like such undiminishibility (*sic*) endure so much mastication. We have chewed a piece of this gum contentedly for two hours without any perceptible change in its bulk, and after remaining under the seat of the

chair, on the under side of the table, or on the bedpost over night, if not found and confiscated, it was ready for as grand service as when first pressed between the molars. We believe that every ship sailing upon the high seas should be well supplied with chewing-gum; and in time of danger of shipwreck the passengers should be furnished with at least a half-dozen pieces, so that if cast upon some barren and uninhabitable coast or island, they might have something with which to beguile the weary hours; and we know of nothing so innocently beguiling."

THE METRIC SYSTEM.

In Russia all medical and pharmaceutical students are now obliged to make themselves acquainted with the metric system, which is to be legalised and made compulsory in prescribing and dispensing after five years. The British Islands and the United States are almost the only civilised countries that cling to the clumsiness of the old weights and measures. In America some advance is being made. The metric system alone has been legalised by Congress, and it is in use in the U. S. Navy, Marine, Hospital Service, Coast Survey, and Post Office. At the Toronto Meetings of the American Medical Association (Sept., 1889) a committee was appointed "to promote the use of the metric system of weights and measures among professional men, and especially among physicians and pharmacists." The convention for the seventh decennial revision of the U. S. Pharmacopœia, which met at Washington on May 6, 1890, decided to adopt the metric system in the next edition. We are indebted to the N. Y. *Medical Record* for these facts, and also for the following rough practical estimate:—An ordinary teaspoon contains 5 c.c., a dessertspoon 15 c.c., a tablespoon 20 c.c.

EXALGIN.

In a communication to the Academie de Médecine M. Desnos states that he found exalgin most useful in neuralgia of the face, in neuralgia of the ophthalmic division of the fifth nerve, in intercostal and ilio-lumbar neuralgia, and in sciatica. In one remarkable case of sciatica, which resisted all other remedies, he effected a cure by giving 1 gramme 75 centigr. of exalgin. [Exalgin is an active and powerful drug, and we do not recommend any dose to exceed 7 grains.]

ELECTRICAL EXECUTION.

There has been difference of opinion as to the result of the experiment tried in the New York State Prison, at Auburn, on the 6th of August, 1890. A recent number of the *Occidental Medical Times* impartially reviews the whole case, and decides that though the electrical arrangements and manipulations were unquestionably mismanaged, the execution was not a failure—death was painlessly inflicted. After quoting from the *Medical*

Record of August 9th, 1890, a full report of the execution and the autopsy, the article states that the two questions to be determined are—Was death instantaneous on the first impact of the current, although respiratory movements continued after its first intermission? Did a condition of complete unconsciousness and insensibility to pain supervene upon the first shock? The first question is not and cannot be answered; scientific opinion unanimously answers the second affirmatively. In spite, then, of the inexplicable and inexcusable bungling of the operators, we may conclude that death was painless and instantaneous, and that the Auburn electrical execution was, *quâ* execution, a success.

BENZOATE OF GUAIACOL. $C_6H_4 \begin{matrix} OCH_3 \\ C_6H_5, COO. \end{matrix}$

Much good was expected from the benzoate of guaiacol in phthisis, but Sahli has found that given in quantities varying from 6 to 10 grammes. in twenty-four hours it produces no effect. The inertness of the salt is said to be due to its stability.—*Les Nouveaux Rémèdes.*

FORTY CASES OF RIB-FRACTURE FROM MUSCULAR ACTION.

Dr. Joseph P. Tunis, at a meeting of the Philadelphia County Medical Society, read a paper giving a brief account of forty cases of rib-fracture by muscular action. The cases are collected from surgical literature, ancient and modern. The cases are thus summarised:—

Rib affected		Side affected	
Second rib -	2	Right side -	10
Fourth „ -	1	Left „ -	19
Fifth „ -	2	Unrecorded -	11
			40
Sixth „ -	5		
Seventh „ -	3		
		Sex	
Eighth „ -	7	Males -	22
Ninth „ -	7	Females -	17
Tenth „ -	6	Unrecorded -	
Eleventh „ -	7		
Unrecorded -	9		

—*The Times and Register*, October 25th.

HYDROSTATIC TREATMENT OF INVERSION OF THE WOMB.

M. Neugebauer reports the successful treatment of inversion of the womb of a woman twenty-two years old by inserting a caoutchouc bag against the fundus uteri, which occupied the upper two-thirds of the vagina, and gradually filling the bag with water. The treatment commenced on the 10th of June by inflating the bag with ten ounces of

water, and gradually, by daily increments, increasing the quantity until it reached fifteen ounces, which it did on the 17th of June, when the uterus returned to its normal condition, and has remained so.—*Le Mercredi Médical*, 5th November.

ARISTOL FOR LUPUS.

At a meeting of the Société de Thérapeutique, on the 1st of September, 1890, M. Boymond recommended the following ointment for lupus:—Aristol, 3 to 10 grammes; vaselin, 90 grammes.—Mix. To be applied two or three times daily to the sore, the part having been previously washed with soap.—*L'Union Médicale*, No. 130.

ENDURANCE.

Professor N. Shaler (*Schribner's Magazine*, November) writes:—On May the 7th, 1864, General Joseph Johnson, C.S.A., commenced his Atlanta campaign. The first Kentucky brigade numbered 1,140. Until the 1st of September the brigade was almost continuously in action. In this period they received 1,860 hospital wounds—the dead counted as wounds—and but one wound for each visitation to the hospital. Only 50 men were unwounded. There were 240 men left for duty, and only 10 deserted.

DR. HALLIBURTON'S "CHEMICAL PHYSIOLOGY."

TO THE EDITOR OF THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

Sir,—While thanking you for the appreciative review of my book on Chemical Physiology in the May number of your Journal, I should like to be allowed to remark that the only error which your reviewer has pointed out in the book is not one in reality. Your reviewer says that the statement that "the most abundant urate obtained from human urine is the *normal* sodium urate" is incorrect. Perhaps it would have been better if I had used the words *contained in*, instead of *obtained from*. With this alteration, the statement is perfectly correct. The careful reader of my book will immediately see that I am, at the page where the statement in question occurs, speaking of normal urine. On the following page the acid sodium urate is spoken of as the chief constituent in deposits of urates, and on the page after this a *résumé* of Sir William Roberts' views on the quadrurates is given. If Sir W. Roberts' theory is ultimately accepted, the sentence of which your reviewer falls foul will of course require modification.

I remain, truly yours,

W. D. Halliburton.

King's College, London, 7th May, 1891.

INDEX

TO THE NINETY-FIRST VOLUME.

Abdominal section, Dr. Macan's case of, 163.
Academy of Medicine in Ireland, Royal, 71, 156, 252, 345, 452, 530; *Rev.*, 423.
Acromegaly, Dr. Joseph Redmond's case of, 72.
Ahlfeld on Cæsarean section, 526.
Allen, Dr. Francis J., aids to sanitary science, *Rev.*, 325.
American—Physicians, Transactions of the Association of, *Rev.*, 139—South, journalism, 184—Dermatological Association, Transactions, *Rev.*, 446.
Anæsthesia, cocaïn and antipyrin combined for local, 184.
Analgesics, recent, 239.
Anatomical collective investigations, 534.
Anatomy—recent works on, *Rev.*, 36—of the mastoid region, by Dr. Birmingham, 116—and Physiology, Section of, in the Royal Academy of Medicine in Ireland, 165, 534.
Aniline—coloured sweetmeats, illness caused by, Sir Charles Cameron on, 266.
Animals, relation of diseases of, to those of man, 277.
Antifebrin, 250.
Antipyrin—250—incompatibles of, 153—and cocaïn combined for local anæsthesia, 184—obstinate vomiting, 356.
Aphasia and left hemiplegia, Dr. Wallace Beatty's case of, 160.
Aphonia, hysterical, 374.
Aristol—241—for lupus, 552.
Army Medical Department, 280—report for 1888, *Rev.*, 133.
Arsenic in early stages of enteric fever, by Mr. Frederick Kirkpatrick, 420.
Arterial anomalies, 86.
Arteritis, syphilitic, by Dr. Paul Le Roux, 490.
Atkins, Dr. Ringrose, report on nervous and mental disease, 54, 150.
Atlas of clinical medicine, *Rev.*, 522.
Atthill, Dr. Lombe, education of midwives, 265.
Axis—thyroid, 535—vertebral, 536.

Bagot, Dr., complete or annular prolapse of the urethral mucous membrane, 78—ovarian cyst, 346—massage for incontinence of urine in females, 346.
Baker, Dr. A. W. W., pathology of a dentigerous cyst, 85.
Ball, Mr. W. Platt, are the effects of use and disuse inherited? *Rev.*, 519.
Barton, Mr. J. K., Marjolin's ulcer, 170.
Beard, Dr. George M., nervous exhaustion, *Rev.*, 233.
Beatty, Dr. Wallace, left hemiplegia with aphasia, 160.
Bennett, Dr. E. H., congenital deformity of upper limb, 82—series of human fibulæ, 165—Koch's method in surgical tuberculosis, 252—cerebral tumour, 352.
Benzoate of guaiacol, 551.
Bernard, Mr. A. G., stammering, *Rev.*, 338.
Berry, Dr. George A., elements of ophthalmoscopic diagnosis, *Rev.*, 342.
Bewley, Dr. H. T., tricuspid narrowing, 85—diagnostic value of venous humming murmurs in the neck, 406.
Bibliography of puerperal fever, 483.
Billings, Dr. John S., description of the Johns Hopkins Hospital, *Rev.*, 326—Index-catalogue of the library of the Surgeon-General's office, United States Army, *Rev.*, 342.
Birmingham, Dr. Ambrose, spontaneous enterectomy, 85—anatomy of the mastoid region, 116, 166—anatomical exhibitions, 165, 534—enormous foramen magnum, 534—vertebral axis, 536.
Bladder—cancer of the, 251—excision of the, 549.
Blaney, Mr. A. J. M., anatomical researches, 536.
Blyth, Mr. A. Wynter, manual of public health, *Rev.*, 316.
Boston City Hospital, report for 1890, *Rev.*, 144.
Boyd, Dr. M. A., Koch's method in phthisical cases, 193, 261, 264.
Brady, Mr. P., anatomical researches, 535.
Bramwell, Dr. Byrom, atlas of clinical medicine, *Rev.*, 522.
Breech presentations, treatment of, 527.
British Medical Service, 279.
Burnet, Dr. R. W., food and dietaries, *Rev.*, 339.
Burroughs, Wellcome & Co., Messrs., charcoal tabloids, 375—quinine tabloids, 376.

Byers, Dr. John W., puerperal fever, 410, 473.
Byrne, the late Dr. J. A., 345.

Cachets, medicine, 376.
Cæsarean section, 527.
Caffyn's liquor carnis, 375.
Cameron, Sir Charles A.—report on public health in Dublin in 1889, *Rev.*, 227—illness caused by aniline-coloured sweetmeats, 266.
Campbell, Dr. Harry, flushing and morbid blushing, *Rev.*, 338.
Cancer of the bladder, 251.
Capp, Dr. William M., the Daughter, *Rev.*, 524.
Cappie, Dr. James, the intracranial circulation, *Rev.*, 441.
Cardiac ossification, 539.
Carter, Dr. Alfred H., elements of practical medicine, *Rev.*, 511.
Cerebral—tumour, Dr. E. H. Bennett on, 352—localisation, 374.
Charcoal tabloids, 375.
Chemical physiology, by Dr. Halliburton, *Rev.*, 445, 552.
Chewing gum, 549.
Chloralamide, 150, 244.
Chloralimide, 150.
Chloride of sodium in neuralgia, 154.
Chloroform—respiratory failure under, 170—action of, 237.
Cirrhosis of lung, Dr. Finny on, 537.
Civil Service insurance scheme, Dr. Cosgrave on, 212, 267.
Clinical records, 460.
Clinical slate, 472.
Cocaïn and antipyrin combined—for local anæsthesia, 184—in obstinate vomiting, 356.
Congenital deformity of upper limb, Dr. E. H. Bennett, 82.
Congrès français de chirurgie, 155.
Cork Medical and Surgical Association, 357.
Corley, the late Dr. Anthony H., 82, 156.
Cosgrave, Dr. E. MacDowel, Civil Service insurance scheme, 212, 267.
Cotter, Dr., enlarged bursa patellæ, 357—submucous fibroid of uterus, 357.
Coupland, Dr. Sidney, on pneumonia, with Dr. Sturges, *Rev.*, 507—examination of the sputum, vomit, fæces, and urine, *Rev.*, 518.
Cozzolino, Professor, igiene dell'orecchio, *Rev.*, 442.
Cranny, Dr., ovarian cystic tumour, 72.
Creasote, hypodermically, 525.
Creolin, 241.
Cruise, Dr. F. R., hypnotism, 377.
Cumston, Mr. Charles G., translation of Dr. Juilliard's paper on extraction of parietal intra-uterine fibro-myomata, 105, 306—translation of Dr. Paul Le Roux' paper on syphilitic arteritis, 490.
Cunningham, Professor D. J., models of cerebral anatomy, 165—Sylvian region of the brain, 167.
Cunningham's anatomy, *Rev.*, 42.
Curette-tenaculum, Dr. More Madden's, 531.
Curtis & Co., Messrs., granular effervescent preparations, 375.
Cystic enchondroma of parotid region, Dr. Moriarty on, 357.
Cystinuria, Dr. Walter G. Smith on, 161.
Cyst—par-ovarian dermoid, 345—of kidney, 351—hydatid of pleura, 281, 354—ovarian, 374.

Daly, Dr. C. C. DeBurgh, annual medical report of the Hao-Meng-Fông Hospital, *Rev.*, 444.
Davis, Mr. J. R. Ainsworth, translation of Selenka's zoological pocket-book, *Rev.*, 149.
Davy, Dr. Henry, clinical slate, 472.
Debierre, Ch., traité elémentaire d'anatomie de l'homme, *Rev.*, 42.
Delirium tremens, Rev. Dr. Talmage on pathology of, 549.
Deutschmann, Prof., Beitrage zur Augenheilkunde, *Rev.*, 229.
Diuretin, 242.
Dixon, Mr. F. A., anatomical researches, 536.
Dolan, Dr. Thomas M., Pasteur and rabies, *Rev.*, 235.
Dublin—rainfall in, during 1890, 181—meteorology of 1890 in, 183—report on public health in, by Sir C. A. Cameron, *Rev.*, 227.
Duffey, Dr. George F., hydatid cyst of the pleura, 281, 354.
Dunne, Mr. J., anatomical researches, 535.

Eclampsia, puerperal, 96.
Edinburgh, Royal College of Physicians, laboratory reports, *Rev.*, 430.
Edinburgh Royal Infirmary, admission of women students to the, 280, 529.
Edinger, Dr. Ludwig, structure of the central nervous system, *Rev.*, 426.
Education of midwives, Dr. Atthill on, 265.
Effervescing powder as a hypnotic, 529.
Elborne, Mr. William, laboratory course of pharmacy and materia medica, *Rev.*, 525.
Elbow, excision of the, 374.
Electrical execution, 550.
Encephaloid carcinoma of skin of thigh, Dr. M'Weeney's case of, 168.
Endocarditis, malignant, Dr. O'Carroll on, 455.

Endo-uterine therapeutics, Dr. More Madden on, 531.
Endurance, 552.
Enteric fever, arsenic in early stages of, Mr. Kirkpatrick on, 420.
Enterolith, Mr. Myles' case of, 169.
Epistaxis, 373.
Euphorine, 247.
Exalgin, 249, 550.
Excision—of the elbow, 374—of the bladder, 549.
Execution, electrical, 550.
Extraction of parietal intra-uterine fibro-myomata by Prof. Vulliet's method of dilatation by tampons, Dr. Emile Juilliard on, 105.
Extra uterine pregnancy, vaginal operation for, 528.
Eye-strain and headache, 356.

Fæcal fistula, Dr. W. J. Smyly's case of, 164.
Falkiner, Dr. Ninian, nasal concretion and rhinolith, 354.
Fannin & Co., clinical slate, 472.
Fatty tumour of the labium, 86.
Fenger on vaginal operations for extra-uterine pregnancy, 528.
Fever—puerperal, by Dr. J. W. Byers, 410, 473—enteric, arsenic in, by Mr. Fred. Kirkpatrick, 420.
Fibro-myomata, extraction of parietal intra-uterine, Dr. Emile Julliard on, 105, 306.
Fibulæ, series of human, Dr. E. H. Bennett on, 165.
Finny, Dr. J. Magee, multiple neuritis, 1, 71—cirhosis of lung, 537.
Fitzgerald, Dr. C. E., lectures for hospital and home nursing, *Rev.*, 137.
Foramen magnum, enormous, Dr. Birmingham's case of, 534.
Fowler, Dr. James K., dictionary of practical medicine, *Rev.*, 135.
Fracture of ribs from muscular action, 551.
Franks, Mr. Kendal, Koch's method in surgical tuberculosis, 253, 260, 287, 354—cystic kidney, 351.
Frazer, Dr., bones of the Irish elk, 85.

Gant, Mr. F. J., the lord of humanity, *Rev.*, 330.
Gemai to Korti, 1884, by Brigade-Surgeon Albert A. Gore, 16.
Gerhardt, Dr. C., Lehrbuch der Auscultation und Percussion, *Rev.*, 449.
Gheel, 372.
Gore, Brigade-Surgeon Albert A., how they went up Nile in 1884, 16, 121.
Granular effervescent preparations, 375.
Gray's anatomy, *Rev.*, 39.
Griffin, Mr. Montague, anatomical researches, 535.
Griffiths, Dr. A. B., researches in micro-organisms, *Rev.*, 426.
Grün, Mr. E. F., handbook to Dr. Koch's treatment, *Rev.*, 49.
Guaiacol, benzoate of, 551.
Gum, chewing, 549.
Gynæcology, report on, by Mr. Horne, 526.

Halliburton, Dr. W. D.—text-book of chemical physiology and pathology, *Rev.* 445—letter from, 552.
Hamilton, Mr. H., pocket medical lexicon, *Rev.*, 234.
Hare, Dr. Hobart Amory, epilepsy, *Rev.*, 146.
Headache, eye-strain and, 356.
Health, Public, recent works on, *Rev.*, 316.
Heart, ossification of the, 539.
Hemiatrophy of face and limbs, Dr. Nixon's case of, 97, 161.
Hemiplegia, left, and aphasia, Dr. W. Beatty's case of, 160.
Hernia—uterine, 95—at the inner inguinal ring, 96.
Heron, Dr. G. A., the communicability of consumption, *Rev.*, 438.
Histology of tubercular tissues treated by Koch's method, Dr. M'Weeney on, 486, 537.
Hobart, Dr., submucous fibroid of uterus, 357.
Horne, Mr. A. J., F.R.C.P.I., report on midwifery and gynæcology, 526.
Hospitals, provincial, of Ireland, Mr. Z. Johnson on, 217.
How they went up Nile, by Brigade-Surgeon Gore, 16, 121.
Hunter, Mr. Hugh, anatomical researches, 535.
Hydatid cyst of the pleura, Dr. Duffey on, 281, 354.
Hydrostatic treatment of inversion of the womb, 551.
Hygiene, recent works on, *Rev.*, 316.
Hyoscin, 153.
Hypnal, 153, 248.
Hypnotic, effervescing powder as a, 529.
Hypnotics, recent, 239.
Hypnotism, Dr. Cruise on, 377—Dr. G. C. Kingsbury on, 396—discussion on, 455.
Hysterical aphonia, 374.

Ichthyol, 242.
Illinois State Board of Health, *Rev.*, 517.
Incontinence—nocturnal, 70—of urine in females, massage for, by Dr. Bagot, 346.
Index-Catalogue of the library of the Surgeon-General's Office, United States Army, *Rev.*, 342.

India, Clinical Manual for, *Rev.*, 524.
Induction of premature labour, 70.
Influenza, works on, *Rev.*, 43.
Insurance scheme, Civil Service, Dr. E. M. Cosgrave on, 212, 267.
Interlobular pyopneumothorax, 96.
International Congress of Hygiene and Demography, 472.
Intra-uterine fibro-myomata, extraction of parietal, Dr. Emile Juilliard on, 105, 306.
Intra-venous injection, Mr. Austin Meldon on, 158.
Inversion of the womb, hydrostatic treatment of, 551.
Ireland—Royal Academy of Medicine in, 71, 156, 252, 345, 452, 530 ; *Rev.*, 423—provincial hospitals of, Mr. Z. Johnson on, 217—Royal University of, calendar, *Rev.*, 451.
Italy, laparotomy in, 155.

Jennings, Dr. Oscar, cycling and health, *Rev.*, 147.
Johns Hopkins Hospital, description of, by Dr. Billings, *Rev.*, 326.
Johnson, Mr. Zachariah, provincial hospitals of Ireland, 217.
Johnston, Brigade-Surgeon J. Crosse, translation of Jennings on cycling and health, *Rev.*, 147.
Juilliard, Dr. Emile, extraction of parietal intra-uterine fibro-myomata by Prof. Vulliet's method, 105, 306.

Kassassin, action at, 27.
Keanu, 184.
Keating, Dr. John M., pocket medical lexicon, *Rev.*, 234.
Kidney—cystic, Mr. Franks on, 351—anatomical investigations on, 534, 535.
Kingsbury, Dr. George C., hypnotic suggestion, *Rev.*, 52—should we give hypnotism a trial? 396.
Kirkpatrick, Mr. Frederick, arsenic in the early stages of enteric fever, 420.
Koch's treatment in tubercular disease, 252, 261, 354, 486—works on, 49—in lupus, 157—by Dr. C. J. Nixon, 185, 262—by Dr. M. A. Boyd, 193, 261—by Dr. J. W. Moore, 205, 261—by Mr. Kendal Franks, 287—histology of tissues after, Dr. M'Weeney on, 486, 537.
Kuborn, Dr. P., guide de dissection et résumé d'anatomie topographique de D. J. Cunningham, *Rev.*, 42.

Labium, fatty tumour of the, 86.
Labour, induction of premature, 70.
Lane, Mr. Hugh, differentiation in rheumatic diseases, *Rev.*, 343.
Laparotomy in Italy, 155.
Leamington, natural mineral waters and spa of, Mr. Eardley Wilmot on, *Rev.*, 234.
Lentaigne, Mr., treatment of tuberculosis by Koch's method, 258, 262.
Le Roux, Dr. Paul, syphilitic arteritis, 490.
Leucocythæmia, myelogenous, by Dr. Wallace Beatty, 454.
Lipoma, subconjunctival, Mr. Story's case of, 539.
Liquor carnis (Caffyn's), 375.
Little, Dr. T. E., nasal concretion and rhinolith, 354.
Localisation, cerebral, 374.
Long, Mr. J. J., anatomical researches, 535.
Lo Sperimentale, *Rev.*, 521.
Lowe, Mr. T. Pagan, the Bath thermal waters and treatment, *Rev.*, 53.
Lupus—treated by Koch's method, by Mr. Thornley Stoker, 157—aristol for, 552.

Macan, Dr. A. V., cancer of cervix uteri, 73—fibroid of uterus removed by laparotomy, 74—retained fœtus, 80—fibrous tumour, 163—multiple ovarian cystoma, 163—abdominal section, 163.
M'Ardle, Mr. J. S., sub-peritoneal fibroid, 162—ruptured ovarian cyst, 162—large ovarian cyst, 163—Koch's method in surgical tuberculosis, 258.
M'Gee, Mr. J. H., anatomical researches, 535.
M'Weeney, Dr., encephaloid carcinoma of skin of thigh, 168—remarks on Koch's method, 263—histology of tubercular tissues treated by Koch's method, 486, 537.
Malignant endocarditis, by Dr. O'Carroll, 455.
Marjolin's ulcer, Mr. J. K. Barton's case of, 170.
Marston, Surgeon-General Jeffery E., typhoid fever and tropical life, *Rev.*, 47.
Maryland, transactions of the medical and chirurgical faculty of, *Rev.*, 334.
Mason, Dr. S. R., operative treatment of uterine cancer, 75.
Massachusett's Medical Society, medical communications of the, *Rev.*, 335.
Massage, 357—for incontinence of urine in females, Dr. Bagot on, 346.
Mastoid region, anatomy of the, Dr. Birmingham on, 116, 166.
Materia medica and therapeutics, report on, by Dr. Walter G. Smith, 236.
Mays, Dr. Thomas J., pulmonary consumption among firemen, *Rev.*, 148.
Meckel's diverticulum ilei, 535.

Medical—diaries, 1891, *Rev.*, 50—titles, 226—Service, British, 279—Annual, 1891, *Rev.*, 512—education of women in Edinburgh, 529.
Medicine—in Ireland, Royal Academy of, 71, 156, 252, 345, 452, 530; *Rev.*, 423—Section of, in the Royal Academy of Medicine in Ireland, 71, 160, 452—cachets, 376.
Meldon, Mr. Austin, transfusion of intravenous injection of milk, 158—Koch's method in surgical tuberculosis, 257.
Menstruation, influence of, on phthisis, 170.
Mental disease, Dr. Atkins' report on, 54, 150.
Meteorological notes, 92, 177, 273, 368, 468, 545.
Metric system, 550.
Midwifery, report on, by Mr. Horne, 526.
Midwives Registration Bill and Education, discussion on, 265.
Miller, Mr. A. G., flat-foot, *Rev.*, 52.
Moore, Dr. J. W., sanitary and meteorological notes, 87, 171, 268, 363, 463, 540—pulmonary disease treated by Koch's method, 205, 261—venesection in pneumonia in a child, 460.
More-Madden, Dr., par-ovarian dermoid cyst, 345—roller pessary, 530—curette-tenaculum, 531—endo-uterine therapeutics, 531.
Moriarty, Dr., cystic enchondroma of parotid region, 357—blood cast of uterus, 357.
Multiple neuritis, Dr. J. Magee Finny on, 1, 71.
Munchmeyer on Cæsarean section, 526.
Murmurs, venous in the neck, Dr. H. T. Bewley on the diagnostic value of, 406.
Muscular action, fracture of ribs from, 551.
Myelogenous leucocythæmia, Dr. Wallace Beatty on, 454.
Myles, Mr., remarkable enterolith, 169—Koch's method in surgical tuberculosis, 253.
Myoma of the uterus, subperitoneal, 530.

Nasal concretion and rhinolith, Dr. Falkiner on a, 354.
Neck, venous murmurs in the, Dr. Bewley on, 406.
Nerves, distribution of—last dorsal and first lumbar, 535—on dorsum of the foot and toes, 536.
Nervous—and mental disease, Dr. Atkins' report on, 54, 150—troubles following organic stricture, 70.
Neuralgia, chloride of sodium in, 154.
Neuritis, multiple, by Dr. J. Magee Finny, 1, 71.
Neuro-anatomy and physiology, 60.
Neuro-pathology and pathological anatomy, 64.
Neuro-therapeutics, 150.
New preparations and scientific inventions, 375, 472.
Nile, how they went up, by Brigade-Surgeon Albert A. Gore, 16, 121.
Nixon, Dr. C. J., sclerodermia, 97, 161—Koch's treatment of pulmonary tuberculosis, 185, 262.
Nixon, Mr. F. A., Koch's method in surgical tuberculosis, 252, 260.
Nocturnal incontinence, 70.

Obstetrics, Section of, in the Royal Academy of Medicine in Ireland, 72, 162, 345, 530.
O'Callaghan, Mr. Robert, subperitoneal myoma of the uterus, 530.
O'Carroll, Dr., remarks on Koch's method, 263—malignant endocarditis, 455—case of syringo-myelia, 538.
Œsophageal stricture, 357.
Ophthalmia, sympathetic, Mr. J. B. Story on operative treatment of, 158.
Orexin, 242.
Organic stricture, nervous troubles following, 70.
Ossification, cardiac, 539.
Out-patient department of clinical hospitals, Dr. W. G. Smith on, 358.
Ovarian—tumour, specimens of, 162, 163—cysts, 374.

Page, Mr. Herbert, railway injuries, *Rev.*, 513.
Paget, Sir James, Bart., studies of old case-books, *Rev.*, 331.
Parkin bequest prize, 372.
Par-ovarian dermoid cyst, 345.
Pathological Society of London, transactions of the, *Rev.*, 344.
Pathology—Section of, in the Royal Academy of Medicine in Ireland, 82, 167, 351, 537—of delirium tremens, 549.
Patteson, Dr. R. Glasgow, scirrhus cancer of the male breast, 85—fibro-glandular hyperplasia of prostate, 167.
Periscope, 96, 184, 277, 372, 472, 549.
Pessary, Dr. More Madden's roller, 530.
Phlebitis, septic, Mr. Tobin's case of, 539.
Phenacetin, 251.
Phthisis—influence of menstruation on, 170—Koch's treatment in, 49, 185, 193, 205.
Physiology, Anatomy and, Section of, in the Royal Academy of Medicine in Ireland, 165, 534.
Pleura, hydatid cyst of the, Dr. Duffey on, 281, 354.
Pneumonia—in a child treated by venesection, Dr. J. W. Moore's case of, 460—Drs. Sturges and Coupland on, *Rev.*, 507.

Premature labour, induction of, 70.
Presentations, treatment of breach, 527.
Prostate, fibro-glandular hyperplasia of, by Dr. Patteson, 167.
Provincial hospitals of Ireland, Mr. Z. Johnson on, 217.
Psoriasis, salicylic acid in, 96.
Psychiatry, clinical, 54.
Public Health, recent works on, *Rev.*, 316.
Puerperal—eclampsia, 96—fever, Dr. J. W. Byers on, 410, 473.
Pulmonary tuberculosis—Koch's treatment in, 49, 185, 193, 205, 287—wine for, 251.
Purdy, Dr. Charles W., diabetes, *Rev.*, 425.
Pyopneumothorax, interlobular, 96.

Quain's elements of anatomy, *Rev.*, 36.
Quinine tabloids, 376.

Railway injuries, Mr. H. Page on, *Rev.*, 513.
Rainfall in Dublin in 1890, 181.
Ranch, Dr. John H., Illinois State Board of Health, *Rev.*, 517.
Records, clinical, 460.
Redington, Mr. J. M., anatomical researches, 536.
Redmond, Dr. Joseph, case of acromegaly, 72—remarks on Koch's method, 263.
Rentoul, Dr. R. Reid, the dignity of woman's health, *Rev.*, 448.
Report—Army Medical Department for 1888, *Rev.*, 133—of the City Hospital, Boston, 1890, *Rev.*, 144—on Public Health in Dublin in 1889, *Rev.*, 227.
Reports—on nervous and mental disease, by Dr. Ringrose Atkins, 54, 150—on materia medica and therapeutics, by Dr. Walter G. Smith, 236—on midwifery and gynæcology, by Mr. A. J. Horne, 526—from the laboratory of the Royal College of Physicians of Edinburgh, *Rev.*, 430.
Rhinolith, Dr. N. Falkiner on a, 354.
Rib-fracture from muscular action, 551.
Roberts, Dr. Frederick T., handbook of the theory and practice of medicine, *Rev.*, 341.
Robson, Mr. A. W. Mayo, secretion of bile in biliary fistula, *Rev.*, 340.
Riggs, Dr. E. Eugene, Edinger's central nervous system, *Rev.* 429.
Rohé, Dr. George H., text-book of hygiene, *Rev.*, 323.
Roller pessary, Dr. More Madden's, 530.
Royal Academy of Medicine in Ireland, 71, 156, 252, 345, 452, 530; *Rev.*, 423.
Royal University of Ireland calendar and examination papers, *Rev.*, 451.
Russia, respect for science in, 362.

Salicylic acid, 236—in psoriasis, 96.
Salipyrin, 462.
Sanitary and meteorological notes, 87, 171, 268, 363, 463, 540.
Scottish Association for the Medical Education of Women, 529.
Science—works on, *Rev.*, 316—in Russia, respect for, 362.
Scientific inventions, 375, 472.
Scleroderma, Dr. C. J. Nixon on, 97, 161.
Section, Cæsarean, 526.
Selenka, Dr. Emil, zoological pocket-book, *Rev.*, 149.
Septic phlebitis, Mr. Tobin's case of, 538.
Severn, Mr. W. D., handbook to Dr. Koch's treatment, 49.
Shoemaker, Dr. John N., heredity, *Rev.*, 231.
Sibthorpe, Dep. Surg.-General Charles, Clinical Manual for India, *Rev.*, 524.
Simulo, 153.
Slate, clinical, 472.
Smith, Dr. A. H., acute obstructive diseases of the lungs, *Rev.*, 448.
Smith, Dr. Walter G., on cystinuria, 161—report on materia medica and therapeutics, 236—presidential address to Dublin Branch Brit. Med. As., 358.
Smyly, Dr. W. J., myomata removed by supra-vaginal hysterectomy, 73—myoma uteri, 80—double pyosalpinx, 81—large fibro-myoma, 163—fæcal fistula, 164—uterus extirpated per vaginam, 346—chronic salpingo-oöphoritis. 346.
Snow, Dr. Herbert, proclivity of women to cancerous diseases and certain benign tumours, *Rev.*, 450—the barbarity of circumcision for congenital abnormality, *Rev.*, 520.
Soudan, Eastern, 1884–85, 28.
South American journalism, 184.
Special reports—nervous and mental disease, by Dr. Ringrose Atkins, 54, 150—materia medica and therapeutics, by Dr. W. G. Smith, 236—midwifery and gynæcology, by Mr. A. J. Horne, 526.
Splenectomy, 374.
State Medicine, Section of, in the Royal Academy of Medicine in Ireland, 266.
Stoker, Mr. W. Thornley, treatment of lupus and tuberculosis by Koch's method, 157, 257.
Stokes, Sir William, Koch's method in surgical tuberculosis, 254.
Story, Mr. J. B., operative treatment of sympathetic ophthalmia, 158—subconjunctival lipoma, 539.
Stricture, organic, nervous troubles following, 70.
Sturges, Dr. Octavius, and Dr. Coupland, on pneumonia, *Rev.*, 507.

Subconjunctional lipoma, Mr. Story's case of, 539.
Subperitoneal myoma of the uterus, 530.
Sulphonal, 245.
Surgery, Section of, in the Royal Academy of Medicine in Ireland, 156, 252, 354.
Surgical tuberculosis, Koch's method in, 252.
Suture, uterine, best material for, 526.
Swanzy, Mr. H. R., handbook of diseases of the eye, *Rev.*, 145.
Sweetmeats, aniline-coloured, illness caused by, Sir C. Cameron on, 266.
Sympathetic ophthalmia, by Mr. J. B. Story, 158.
Syphilitic arteritis, by Dr. Paul Le Roux, 490.
Syringo-myelia, Dr. O'Carroll's case of, 538.
System, the metric, 550.

Tabloids—charcoal, 375—quinine, 376.
Tel-el-Kebir, battle of, 27.
Therapeutics—report on, by Dr. W. G. Smith, 236—endo-uterine, Dr. More Madden on, 531.
Thompson, Dr. E. Symes, influenza, *Rev.*, 43.
Thompson, Mr. W. H., anatomical researches, 534.
Thomson, Dr. William, Koch's method, in surgical tuberculosis, 259.
Thomson, Mr. William, transactions of the Royal Academy of Medicine in Ireland, *Rev.*, 423.
Thyroid axis, formation of the, 535.
Tissues, tubercular, histology of, treated by Koch's method, Dr. M'Weeney on, 486, 537.
Tobin, Mr., multilocular ovarian cyst, 73—Koch's method in surgical tuberculosis, 256—septic phlebitis, 539.
Tongue, urticaria of the, 132.
Transactions—of the Association of American Physicians, *Rev.*, 139—Medical and Chirurgical Faculty of the State of Maryland, *Rev.*, 334—Pathological Society of London, *Rev.*, 344—Royal Academy of Medicine in Ireland, *Rev.*, 423—American Dermatological Association, *Rev.*, 446.
Transfusion, Mr. Austin Meldon on, 158.
Trional and tetronal 247.
Tuberculosis—Koch's remedy for, 49, 185, 193, 205, 252, 261, 287, 354, 486—wine for pulmonary, 251.
Turner, Sir William, convolutions of the brain, *Rev.*, 443.
Tweedy, Dr. H. C., Koch's method in tuberculosis, 255.

Urethane, 240.
Urticaria of the tongue, 132.
Uterine—hernia through the cicatrix of a Cæsarean section, 95—suture, best material for, 526—support, Dr. More Madden's, 530.
Uterus—fibro-myomata, Prof. Vulliet's treatment of, by Dr. Emile Juilliard, 105, 306—blood cast of, Dr. Moriarty on, 357—submucous fibroid of, by Dr. Hobart, 357—subperitoneal myoma of, Mr. O'Callaghan's case of, 530.

Vaginal operation in extra-uterine pregnancy, 528.
Venesection in a case of pneumonia in a child, by Dr. J. W. Moore, 460.
Venous humming murmurs in the neck, Dr. Bewley on, 406—discussion on, 453.
Vertebral axis in man, variability of attachment of lower limb to, Prof. Birmingham on, 536.
Virchow testimonial fund, 278.
Visiting lists, 1891, *Rev.*, 50.
Vital statistics, 87, 171, 268, 363, 463, 540.
Vittum, Dr. W. H., Edinger's central nervous system, *Rev.*, 429.
Vomiting, cocaïn and antipyrin in obstinate, 356.
Vulliet's, Professor, method of extracting fibro-myomata of uterus by dilatation with tampons, 105, 306.
Vulva, fatal hæmorrhage from laceration of the, 95.

Warren Triennial Prize, 373.
Whitaker, Mr. J. R., notes on pathology, *Rev.*, 337.
White, Dr. W. Hale, general therapeutics, text-book of, *Rev.*, 333.
Whitelegge, Dr. B. Arthur, hygiene and public health, *Rev.*, 325.
Whooping-cough, 96.
Wilmot, Dr. Eardley, Leamington Spa, *Rev*, 234.
Winter on the treatment of breech presentations, 527.
Womb, hydrostatic treatment of inversion of the, 551.
Women students, admission of, to the Edinburgh Royal Infirmary, 280, 529.
Works on—anatomy, *Rev.*, 36—influenza, *Rev.*, 43—Koch's treatment in tubercular disease, *Rev.*, 49—public health, *Rev.*, 316.
Wright, John, Medical Annual, 1891, *Rev.*, 512.

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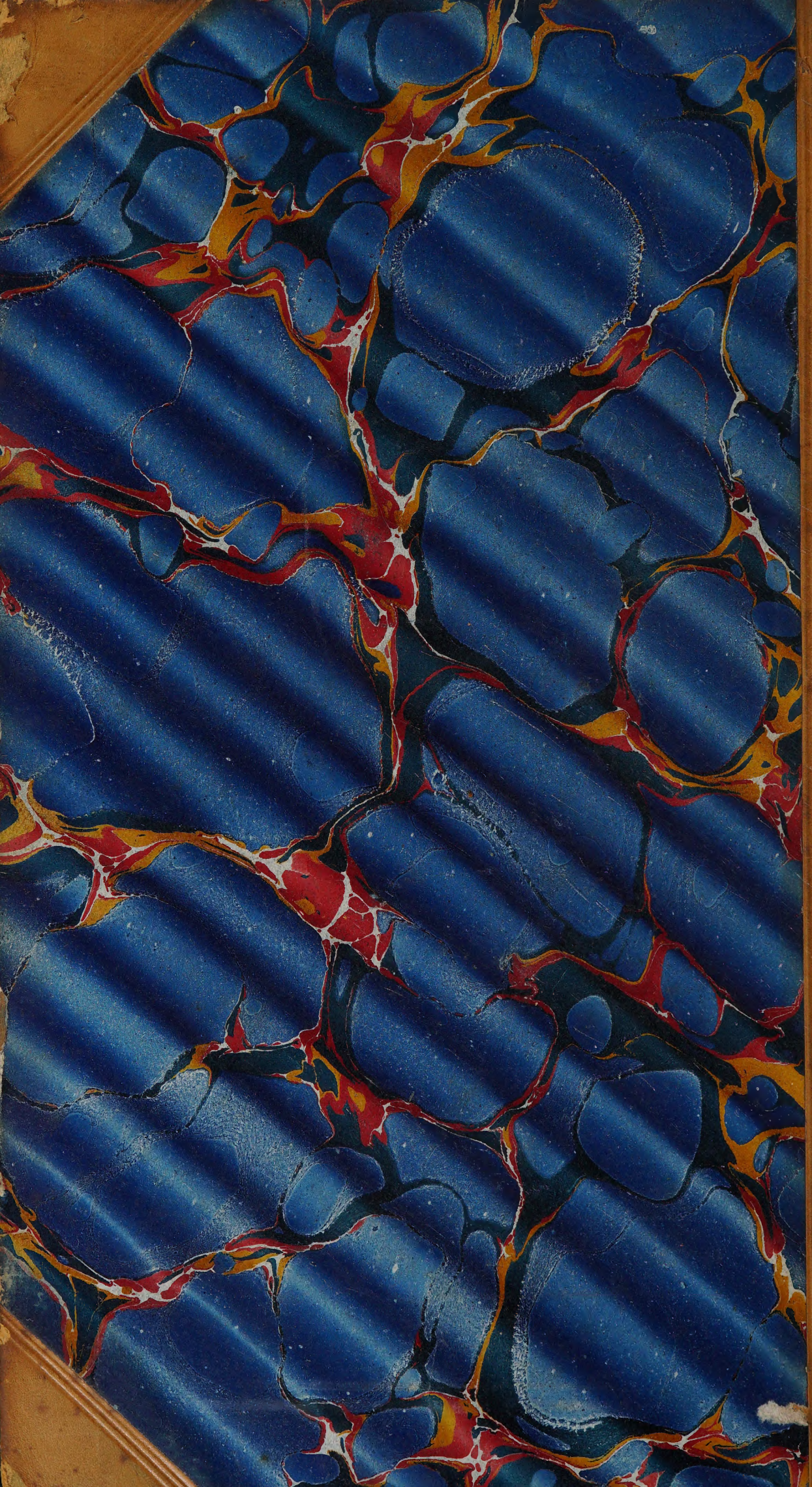
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